Appendix 1

Curriculum Vitae

Name: Craig Bishop

Contact Tel No.: +44 (0)7984 564949 (mobile)

Email: craig@bishopcom.co.uk

Current job title: Independent Consulting Engineer, CEO

Address: 43 Ospringe Street, Faversham, Kent, ME13 8TW

Key Skills and Experience

- 33 years Telecoms, Radio and Broadcast experience
- 26 years experience of 2G/3G/4G telecoms standardisation
- Extensive knowledge of 3GPP and ETSI specifications and procedures including document handling and publication practices
- Sound understanding of 3GPP systems, including Radio Access Interfaces and Networks, Access Stratum protocols, Core Networks, Non-Access Stratum protocols, and IMS
- Experience of ETSI role from regulatory perspective (harmonised standards, mandates, spectrum, etc)
- Depositions, reports, and declarations as expert witness in cases on 3GPP technologies and on 3GPP & ETSI practices and procedures.
- Intellectual property analysis including prior art search and evaluation of patent essentiality
- Application of data analytics and machine learning techniques to standards and IP data
- Programming in Java, Python, C, Octave (Matlab)

Career History

Bishop Communications Ltd. 01/13 –

Independent Telecommuncations Standards and Intellectual Property Consultant

Company is a full ETSI member

Activities have included:

- Provision of expertise for EC funded ETSI Specialist Task Force (STF489) to produce implementation guidelines for Total Conversation for emergency services. Project delivered on time / budget and well received. Ouput published March 2016 as ETSI TR 103 201.
- Provision of expertise for ETSI Specialist Task Force (STF555) assessing the impact on existing standards of communications involving IoT devices in all types of emergency situations. Project delivered on time / budget and well received. Ouput published July 2019 as ETSI TR 103 582.
- Provision of expert support for IPR litigation from standards landscape analysis / background technical reports to expert testimony reports / declarations and depositions on matters including the public availability of 3GPP and ETSI prior art.
- Intellectual property analysis assessing strengths and weaknesses of patents and patent portfolios, conducting searches for prior art, evaluating patent essentiality, and acquring relevant documentation.
- Provision of standards consultancy services for Samsung Electronics in ETSI including membership of the ETSI Board until November 2014

Technologies covered in patent related work include: 3GPP GSM, UMTS, LTE radio interface technologies (Phy, MAC, RLC, RRC), 3GPP access and core networks (GPRS/UMTS & EPC NAS), IMS. Organisations covered include 3GPP & ETSI.

Clients served during last 10 years include: Addy Hart LLP, Alston & Bird LLP, AT&T, Baker Botts LLP, Banner Witcoff LLP, DLA Piper LLP, European Telecommunications Standards Institute (ETSI),

Fish & Richardson P.C., Gibson Dunn LLP, Haynes and Boone LLP, Hillebrand-CE GmbH (working for third party clients as Consulting Engineer for Hillebrand-CE), Kilpatrick Townsend & Stockton, Kirkland & Ellis LLP, K&L Gates LLP, Morgan, Lewis & Bokius LLP, MckoolSmith LLP, PV Law LLP, Paul Hastings LLP, Perkins Coie LLP, Powell Gilbert LLP, Sidley Austin LLP, Samsung Electronics Research & Development Institute UK (SRUK), Taylor Wessing LLP, Williams & Connolly LLP, WilmerHale LLP.

Expert testimony through deposition:

- *Huawei Technologies Co. Ltd. vs. T-Mobile US, Inc., et al.*, Case Nos. 2:16-cv-0052-JRG-RSP, 2:16-cv-0055-JRG-RSP, 2:16-cv-0056-JRG-RSP, and 2:16-cv-0057-JRG-RSP (E.D. Tex.). On behalf of T-Mobile US Inc.
- *T-Mobile US, Inc., et al.* v. *Huawei Technologies Co. Ltd.*, Case Nos. IPR2017-00696 and IPR2017-00697 (PTAB). On behalf of T-Mobile US Inc.
- *LG Electronics, Inc., v. Koninklijke KPN N.V.*, Case No. IPR2018-00558 (PTAB). On behalf of LG Electronics, Inc.
- *Nokia of America Corp. and Ericsson Inc. v. IPCOM, GMBH & Co.,* Case No. IPR2021-00533 (PTAB). On behalf of Ericsson Inc.
- *IPCom, GmbH & Co., Plaintiff, v. AT&T Inc., et al, Defendant, Nokia of America Corp., Intervenor, Ericsson Inc., Intervenor.,* Civil Action No. 2:20-CV-322-JRG*, and IPCom, GmbH & Co., Plaintiff, v. Verizon Communications, et al., Defendant, Nokia of America Corp., Intervenor, Ericsson* nc*., Intervenor.,* Civil Action No. 2:20-CV-323-JRG. On behalf of Ericsson Inc.
- *Ericsson Inc. v. Koninklijke KPN N.V.,* Case No. IPR2022-00069 (PTAB). On behalf of Ericsson Inc.

Expert testimony in court:

- *Between IPCom GmbH and Vodafone, et al.,* Claim No. HP-2018-000030 Claim No. HP-2018-000031, High Court of Justice, Business & Property Courts of England and Wales, Intellectual Property List (ChD), Patents Court. Retained by Vodafone.
- *Between (1) Mitsubishi Electric Corporation (2) Sisvel International SA and Oneplus Mobiletech UK Limited, Oppo Mobile UK Ltd, Xiaomi Technology UK Limited, et al.,* Claim No. HP-2019-000014, High Court of Justice, Business & Property Courts of England and Wales, Intellectual Property List (ChD), Patents Court. Retained by Oneplus, Oppo, and Xiaomi (trial held remotely due to COVID-19 restrictions)

Samsung Electronics Research Institute (SERI) 12/96 – 01/13

Director Standards and Industry Affairs 03/11 – 01/13

Mission and Tasks as for previous role plus:

- Proactive member of ETSI Board following election as Board member in November 2011
- Worked with Samsung internal and external legal counsel in response to EC investigation into Samsung suspected abuse of Standards Essential Patents.
- Deposed by Apple as fact witness in ITC investigation 337-TA-794.

Head of Advanced Technologies Standards & Regulation 09/05 - 03/11

Mission: To help position Samsung and SERI at the forefront of mobile telecommunication developments through participation in and leadership of mobile communications standards and European regulatory affairs

Key tasks:

- Developed standards and research strategy and coordinated activites with head office, acting as official Samsung contact for the European Telecommunications Standars Institute.
- Programme managed standardisation and regulation projects covering 3GPP (RAN2, CT1, SA2, SA1, SA, RAN, CT), OMA, and mobile Broadcast strategies and technologies (DVB Forum),

European Framework projects (FP7), Spectrum Management (CEPT, ETSI EM, TFES, BRAN, …) and European Regulatory affairs (Digital Europe, relations with European Commission, …). - Grew department from 3 to 12 persons to cater for these activities.

- Participated and actively contributed to 3GPP SA1 (11/08 – 11/11), SA2 (10/05 – 08/11) , SA and ETSI TC SCP groups on issues including IMS / CS Interworking (VCC / SRVCC, VoLTE, T-ADS, ICS), Local IP Access & Selected IP Traffic Offload (LIPA-SIPTO), MOSAP, M2M/MTC, Embedded / 4FF UICC.
- Drafted and filed communication technology related patents related to 3GPP SA2 and CT1 technologies – 18 filed, mainly IMS and 3GPP NAS related
- Supported Samsung IP team with analysis of Samsung and 3rd party communication technology related patents and claim charts including GSM/GPRS, UTRAN, NAS, and IMS patents
- Chaired SERI Patent Committee from 2007-2009 - SERI achieved patent targets for first time in 2007 and did so in every year following

Standards consultant – part time 09/04 – 09/05

(Whilst studying fulltime for MSC)

During this time, I conducted a review of the wireless communication technolgies and the associated standards space, with a particular emphasis on 802.16a, as well as 3G and 802.11 evolutions. I was also involved in analysis of 3rd party patents and claim charts on request from Samsung IP team.

Technology Manager System Engineering group 06/03 – 09/04

Mission: To establish a System Engineering group within SERI to support development of SERI's dual mode GSM/UMTS radio modem platform.

Key Tasks:

- Defined and implemented System Engineering group strategy including recruitment and line management of the group which grew from 3 to 10 engineers during this period.
- Developed detailed system requirements for SERI's dual mode 2G/3G radio modem platform(s) including production of background documentation describing system wide behaviour
- Defined system test programme for platform, including example test cases using off the shelf test equipment. This project outsourced (under my supervision) to a third party company for completion.
- Provided continued support to development engineers in terms of understanding specification and system requirements, particularly with respect to Access Stratum and Non Access Stratum specifications and protocols.
- Instigated and managed studies investigating optimised system architecture for future Samsung mobile platforms.
- Analysed Samsung and 3rd party 3GPP technology related patents and claim charts on request by Samsung IP team and reported on their value and standards essentiality.

Technology Manager Standards & System Group 04/02 – 06/03

Mission: To provide Standards support to SERI development teams and Samsung's global standardisation activities.

Key Tasks:

- Devised and implemented revised strategy to improve the focus of activities and provide improved support for software developers from a system perspective.
- Attended 3GPP TSG SA plenary and occasional SA WG1 meetings - acted as rapporteur for 3GPP Evolution technical report 3GPP TR 21.902.

- Analysed 3rd party GSM/GPRS technology related patents and claim charts on request by Samsung IP team and reported on their value and standards essentiality.
- Line managed 3 engineers, ensuring that the group provided expert support for SERI SW and HW developers in terms of standards interpretation and system requirements, particularly with respect to the Radio Access Network.

Project Manager 04/00 – 04/02

Mission: To establish and manage development of a dual mode GSM/UMTS modem platform.

Key tasks:

- Defined and managed work relating to core technology development for Samsung's 3G handsets.
- Determined major technical architecture and parameters for the platform producing high level system requirements specification and project development plan.
- As a technical authority on UMTS, supported the project in terms of requirements specification and interpretation (L1, MAC/RLC, RRC, and NAS specifications), and contributed towards the training of UMTS project team members.
- Acting in a consultative capacity, interfaced with other departments in Samsung and with external customers/suppliers on issues relating to 2G and 3G technologies
- Responsible for the overall planning, work allocation and co-ordination of engineers for the project, as well as being involved in recruitment – during this period the number of engineers working on the project increased from 10 to over 40.
- Instigated, defined and managed a feasibility study involving HW and SW engineers, as essential preparation for the development of a dual mode GSM/UMTS radio modem platform.

Senior/Principal Standards Engineer 12/96 – 04/00

Mission: To support Samsung standards and development activities in ETSI and 3GPP.

Key Tasks:

- Gathered and disseminated information throughout Samsung concerning latest specifications and trends in telecommunications, providing advice to Senior Management on future strategies for telecommunications development.
- Acted as sole Samsung representative in ETSI TC SMG2 from December 1996 and during the selection phase for the UMTS Radio Acces Technology providing training for Samsung engineers on elaborated technologies
- Participated in 3GPP TSG RAN WG1 (UTRA Physical Layer), and RAN WG2 (L2/3) contributing specifically in areas related to FEC, Common Packet Channel, and Transmit Diversity
- In 3GPP TSG T WG2 I initiated and acted as rapporteur for the UE capabilities work item. I also acted as liaison officer between TSG T WG2, TSG RAN WG1 and TSG SA WG1 (Service Aspects) on issues of common interest
- Acted as main spokesperson for and advisor on Samsung strategic activities in, 3GPP TSG RAN from 3GPP's creation until April 2000
- Acted in a consultative capacity advising the company on technical, commercial and regulatory issues relating to 3rd generation telecommunications development and implementation.
- Developed and promoted programme to co-ordinate standards activities throughout Samsung. – Samsung Global Standards Strategy Group established in September 1998.
- Attended ETSI TCs, SMG1, SMG4, SMG5, SMG7, SMG9 and SMG11 as required by Samsung to keep abreast of developments prior to establishment of 3GPP

Radiocommunications Agency 06/93 -11/96

HPTO Spectrum Engineer

- Responsible for the management of spectrum for use by PMR and Wireless LAN technologies.
- Defined and instigated development of an improved assignment methodology for Private Mobile Radio (PMR) channels, promoting increased quality and spectrum efficiency.
- Managed research projects involving the assessment and selection of bids from external companies, submitted under competitive tender.
- Represented the Agency in the National and International fora associated with the use of Land Mobile Radio, acting as rapporteur for PMR voice and data standards in ETSI Sub-Technical-Committee RES02, and as chairman of a sub-working group under ITU WP8A drafting the recommendation for use of the radio spectrum by Radio LANs.
- Involved in CEPT Spectrum Engineering Project Teams, dealing with spectrum for Narrow band PMR technology and co-ordination between that technology and T-DAB transmissions in Band III.
- Dispensed technical advice both within the Agency and to external customers, on national and international PMR standards, assessing requests for additional frequencies, and providing technical justification for assignments and wider spectrum policy

BBC Radio 11/89 – 05/93

Radio Operations Engineer

- Worked on projects requiring the design, development, maintenance and testing of equipment for use within the broadcasting chain.
- Responsible for acceptance testing of new studios for Radio 5, and in particular redesign of outside source circuits for the main sports continuity studio.
- Involved in acceptance testing for NICAM transmission routers. Designed and implemented modifications to synchronise transmission feeds, resulting in seamless switching between routers.

Education

1. MSC in Computer Science from the University of Kent

   Awarded (with distinction): 07/2006

   Dissertation title: Roles Variables and Program Analysis – Received prize for outstanding achievement

2. B.Eng. (Hons) in Electronic Engineering from the Polytechnic of Central London

   Awarded: 07/1989

3. In house and external technical and management training including: Learning Tree courses on System Analysis and Design, User Requirements, UML, and Project Management.
4. On-line courses from: Cousera, Udemy, and Zenva courses covering Machine Learning, Python, Data Science, and Natural Language Processing

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THIRD GENERATION PARTNERSHIP PROJECT (3GPP)

PARTNERSHIP PROJECT DESCRIPTION

During the meeting held in Copenhagen, 2 - 4 December 1998 ARIB, ETSI, T1, TTA and TTC agreed this Partnership Project Description.

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Preamble

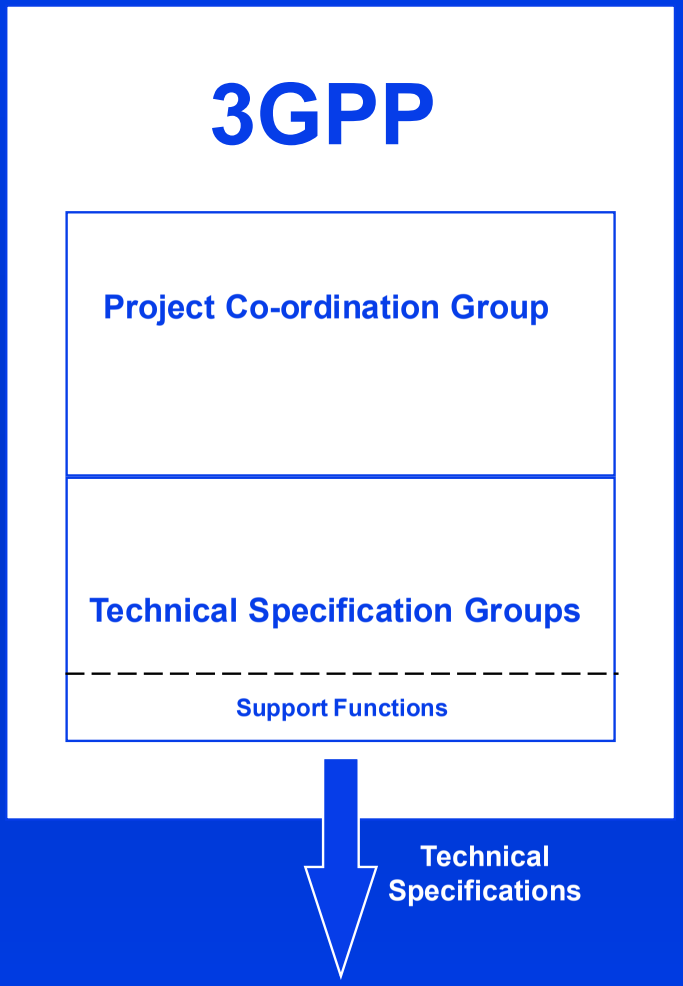
Standards organizations and other related bodies have agreed to co-operate for the production of a complete set of globally applicable Technical Specifications for a 3rd Generation Mobile System based on the evolved GSM core networks and the radio access technologies supported by 3GPP partners (i.e., UTRA both FDD and TDD modes).

The Project is entitled the "Third Generation Partnership Project" and may be known by the acronym "3GPP".

3GPP has been established for the preparation and maintenance of the above mentioned Technical Specifications, and is not a legal entity.

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3GPP Overview



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Definition of the Third Generation Partnership Project

3GPP will provide globally applicable Technical Specifications for a 3rd Generation Mobile System based on the evolved GSM core network, and the Universal Terrestrial Radio Access (UTRA), to be transposed by relevant standardization bodies (Organizational Partners) into appropriate deliverables (e.g., standards).

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Scope and objectives (1)

The Technical Specifications will be developed in view of global roaming and circulation of terminals.

The 3rd Generation Mobile System and its capabilities will be developed in a phased approach. Initially, 3GPP will elaborate, approve and maintain the necessary set of Technical Specifications for the first phase of a 3rd Generation Mobile System including:

- **UTRAN (including UTRA; W-CDMA in Frequency Division Duplex (FDD) mode and TD-CDMA in Time Division Duplex (TDD) mode)**
- **3GPP Core Network (Third Generation networking capabilities evolved from GSM . These capabilities include mobility management and global roaming.)**
- **Terminals for access to the above (including specifications for a UIM)**
- **System and service aspects**

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Scope and objectives (2)

The set of global specifications for the first phase of the 3GPP core network and the specifications for the GSM core network should be common to the largest extent possible and should not be needlessly different.

The results of the 3GPP work will form the basis of member contributions to the ITU in accordance with existing procedures.

3GPP will take account of emerging ITU recommendations on interworking between IMT-2000 family members.

In the framework of agreed relationships, 3GPP will elaborate Technical Specifications that will form the basis of standards, or parts of standards, of the Organizational Partners.

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Characteristics of 3GPP (1)

3GPP is characterized by the following attributes:

- **Minimum production time for Technical Specifications from conception to approval**
- **Fast, electronic based approval process**
- **Maximum use of modern (electronic) working methods**
- **Minimum number of hierarchical levels with decision making taking place at the lowest appropriate levels**

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Characteristics of 3GPP (2)

- **A Project Co-ordination function and a Technical Specification function**
- **Task oriented, ensuring that on completion of the tasks the future of the project is re-evaluated**
- **Cost effective use of financial/human resources provided by Partner Organizations (if required)**

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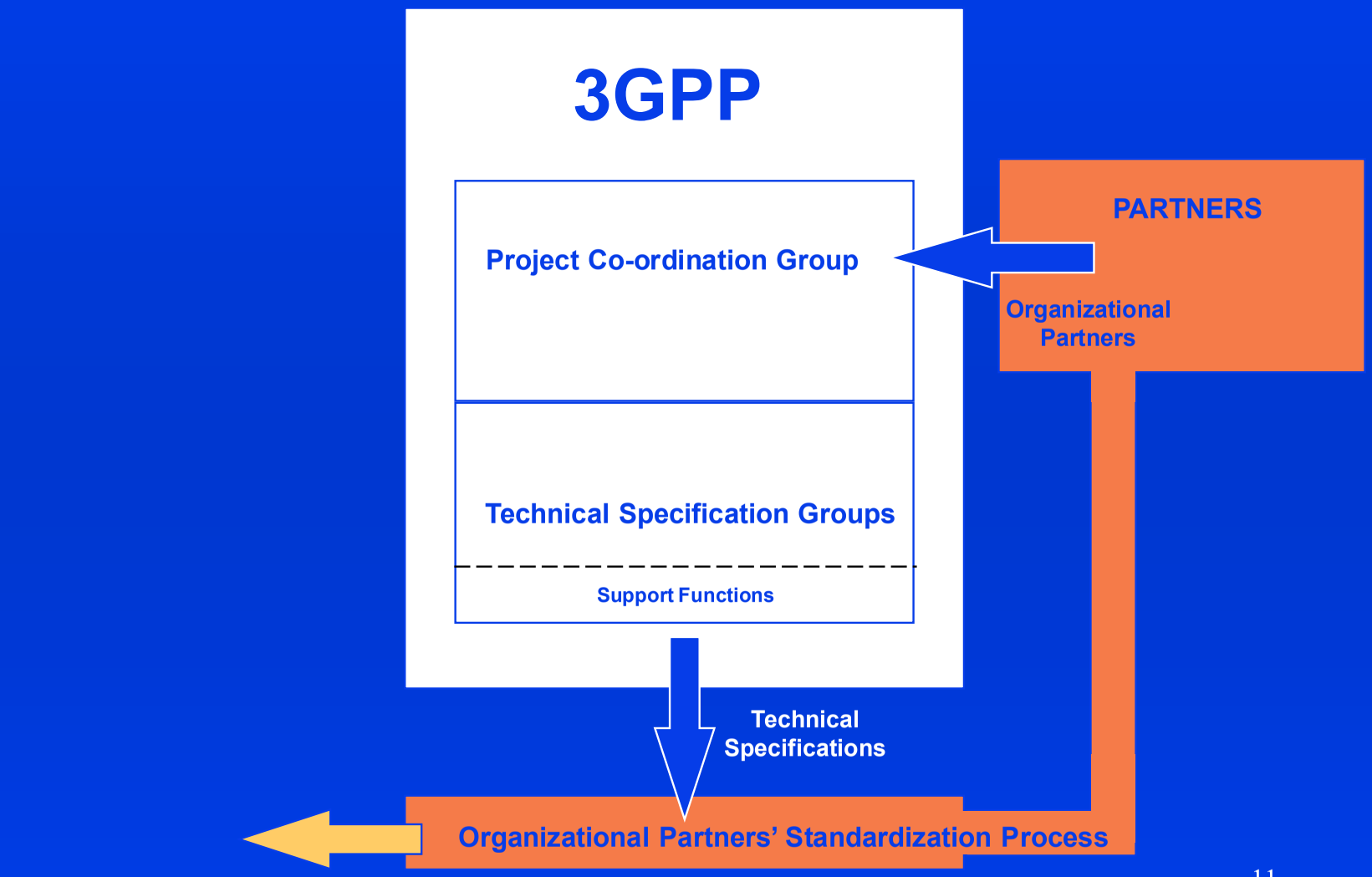
Partnership and Membership

3GPP comprises of:

- **Partners:**
  - **Organizational Partners**
    - **3GPP is open to all standards organizations irrespective of the geographical location.**
  - **Market Representation Partners**
- **Individual Members**

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Organizational Partners (1)



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Organizational Partners (2)

An Organizational Partner is:

An open standards organization with a national, regional or other officially recognized status (in their country or region)

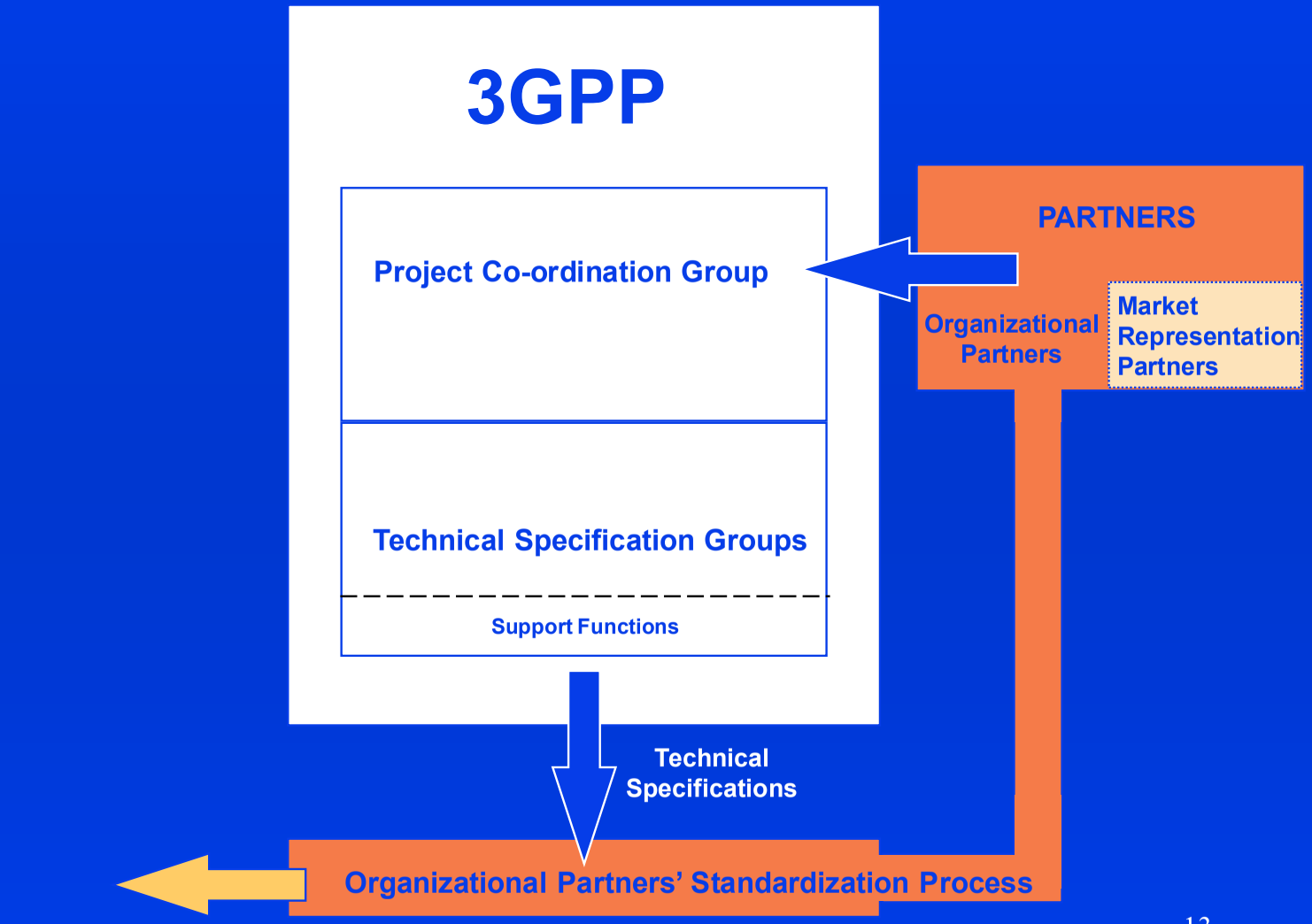
that:

- **has the capability and authority to define, publish and set standards nationally or regionally and**
- **has signed (or whose sponsor has signed) the Partnership Project Agreement**

Organizational Partners will meet as approriate and make decisions by consensus.

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Market Representation Partners (1)



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Market Representation Partners (2)

Standardization should meet market needs.

In order to identify market requirements, the high competence of Market Representation Partners should be used.

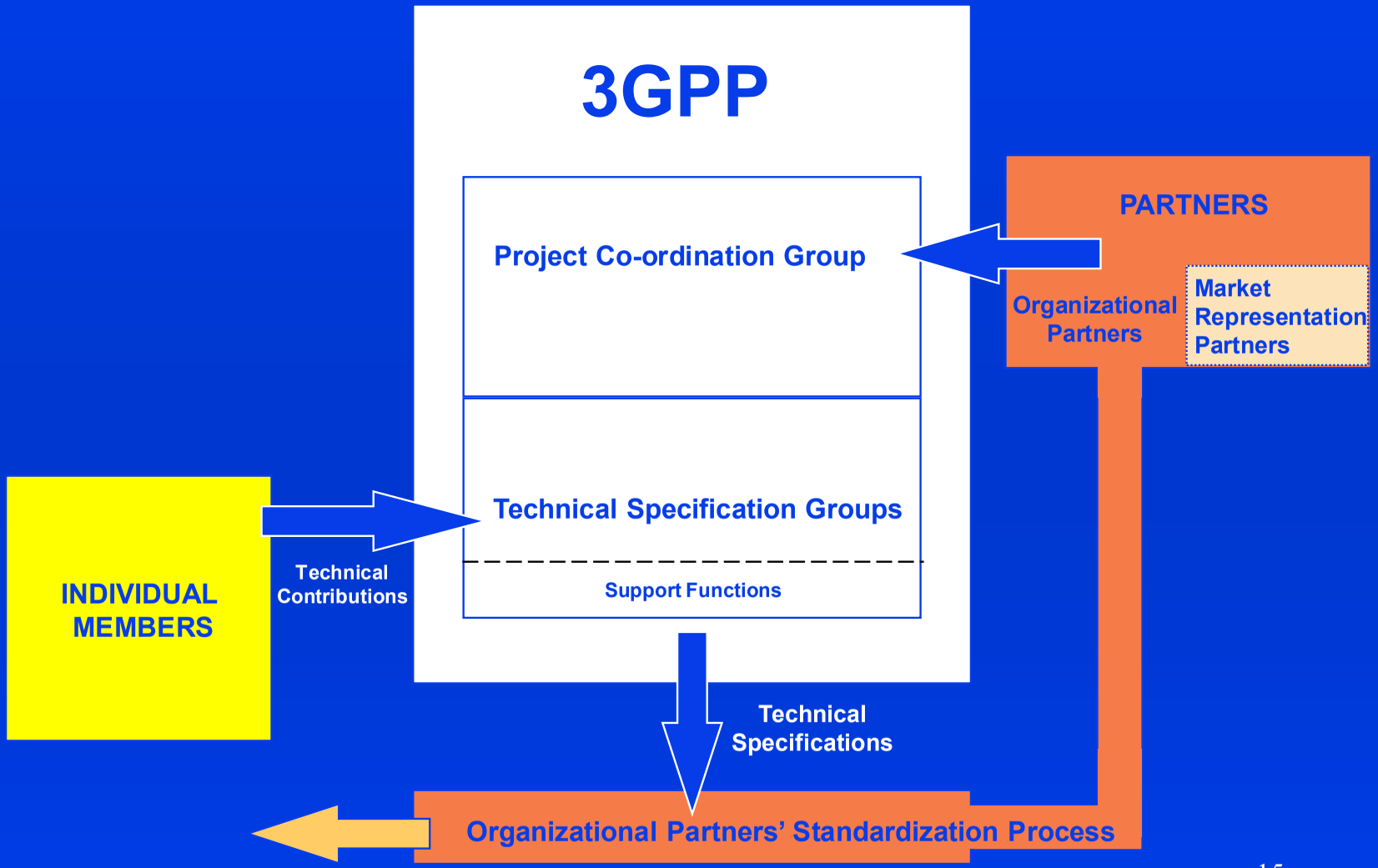
A Market Representation Partner is an organization invited to participate by the Organizational Partners to offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements (e.g. services, features and functionality) falling within the 3GPP scope.

A Market Representation Partner:

- **does not have the capability and authority to define, publish and set standards nationally or regionally**
- **has signed (or whose sponsor has signed) the Partnership Project Agreement**
- **has committed itself to the 3GPP scope**

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Individual Members (1)



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Individual Members (2)

Membership in an Organizational Partner is a pre-requisite for Individual Membership in 3GPP.

Individual Membership is open to legal entities committed to support 3GPP and to:

- **contribute technically or otherwise to one or more of the Technical Specification Groups within the 3GPP scope**
- **use the 3GPP results to the extent feasible**

Individual Membership in 3GPP will be terminated by dissolution, abolition, resignation or expulsion from the related Organizational Partner.

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Individual Members (3)

All entities registered as members of an Organizational Partner and eligible for participation in the technical work of that Partner, can become Individual Members of 3GPP. Individual members shall apply to their Organizational Partner to participate in 3GPP.

Individual Members act in the 3GPP in their own right; they carry the full responsibility for their contributions.

Individual Membership applicants residing in a country/area without an Organizational Partner can apply for membership in an Organizational Partner according to the rules of each Partner. (e.g. ETSI Associate Membership is available)

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Observership

In order to ensure globally applicable Technical Specifications, the status of "Observer" may be granted by the Organizational Partners to an entity which has the qualifications to become a future Organizational Partner. The status of "Observer" includes obligations to:

- **identify as early as possible any regulatory requirements that may lead to options within Technical Specifications**
- **make their IPR policy available for consideration**
- **contribute to the common objective of the 3GPP and avoid duplication of work related to the 3GPP**

The participation rights of an Observer will be decided on a case by case basis.

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Documentation for 3GPP

The following 3 documents describe 3GPP:

- **The Partnership Project Agreement**
- **The Partnership Project Description (this present document)**
- **The Partnership Project Working Procedures**

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The Partnership Project Agreement (1)

The Partnership Project Agreement is a concise legal document signed by participating Partners (or their sponsor).

It contains the minimum legal text necessary for 3GPP to function correctly.

The Partnership Project Agreement refers to the Partnership Project Description and the Partnership Project Working Procedures.

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The Partnership Project Agreement (2)

The Partnership Project Agreement includes obligations on Organizational Partners to commit themselves to the 3GPP scope:

- **to encourage their members to contribute to the common set of Technical Specifications and to avoid duplication of work**
- **to convert / transpose / adopt all relevant Technical Specifications resulting from 3GPP into their own relevant deliverables through their normal processes**
- **to identify as early as possible, any national / regional regulatory requirements that may lead to options within the Technical Specifications**
- **to make their IPR Policy available for consideration**

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The Partnership Project Agreement (3)

The Partnership Project Agreement includes obligations on Market Representation Partners to identify market and service requirement of 3GPP and to contribute to:

- **the promotion of 3GPP**
- **the definition of 3GPP System and Service scenarios**

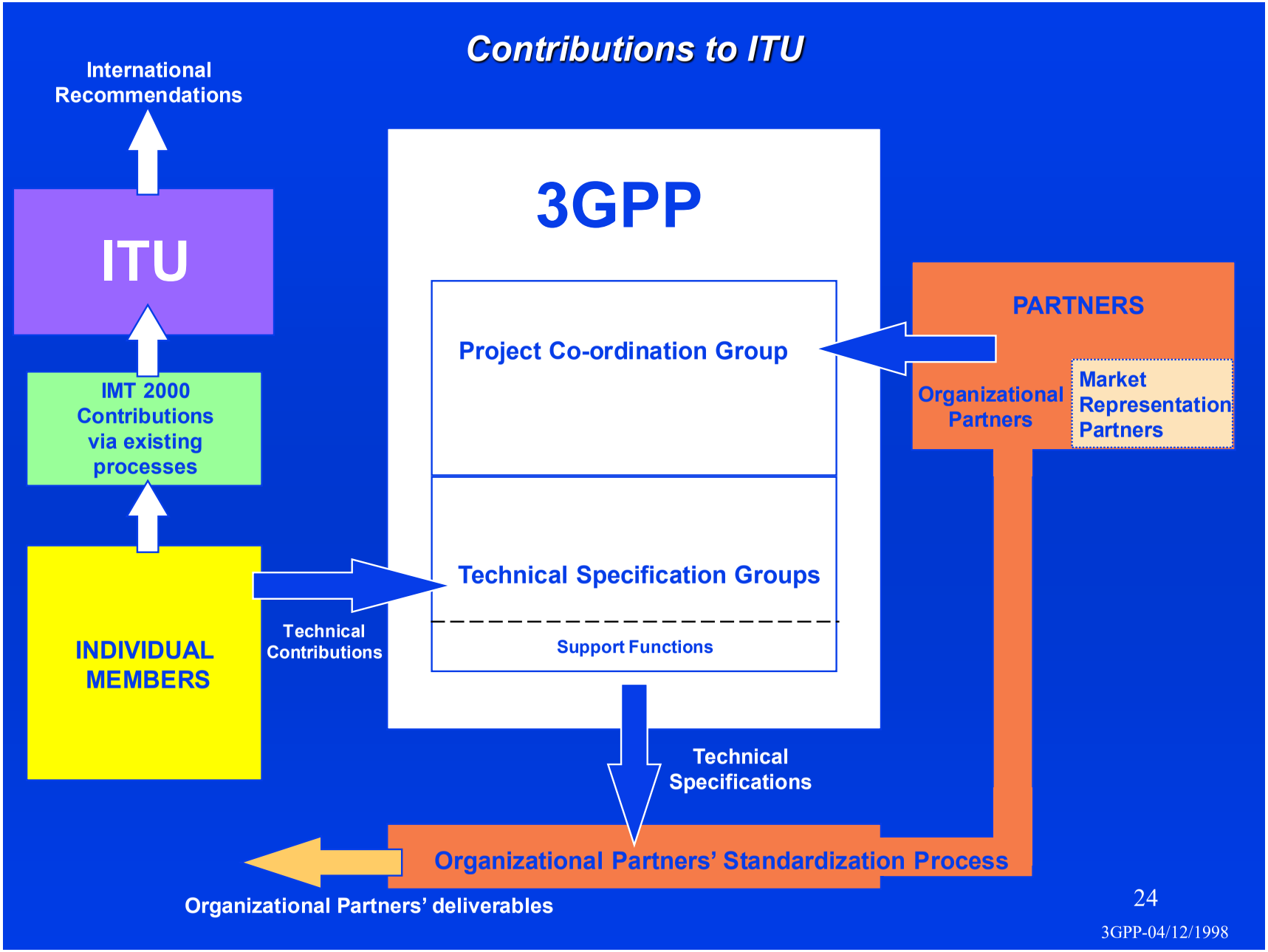
The Market Representation Partners should also encourage their members to contribute to the common objectives of 3GPP and to avoid duplication of work.

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Ownership of the Partnership Project results

The Organizational Partners of 3GPP will have joint ownership (including copyright) of the Technical Specifications.

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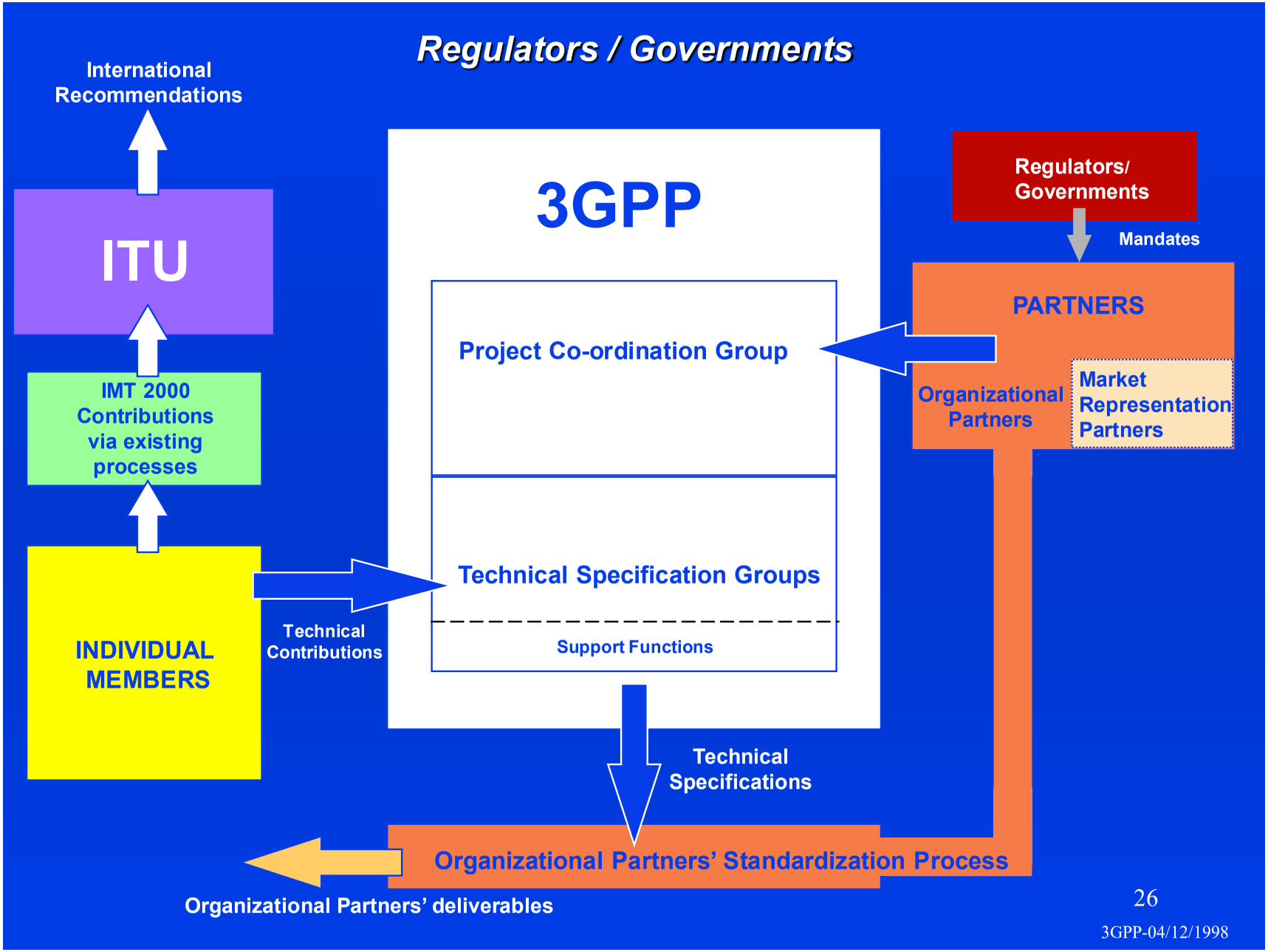
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Submission of 3GPP results to ITU

3GPP will not contribute directly to the ITU.

Formal contributions to ITU Study Groups are made by ITU members following existing national/regional processes.

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National / regional regulatory requirements

Variations imposed by national / regional regulatory requirements will be included in the Technical Specifications as defined by the Technical Specification Groups.

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Resource requirements for establishing 3GPP

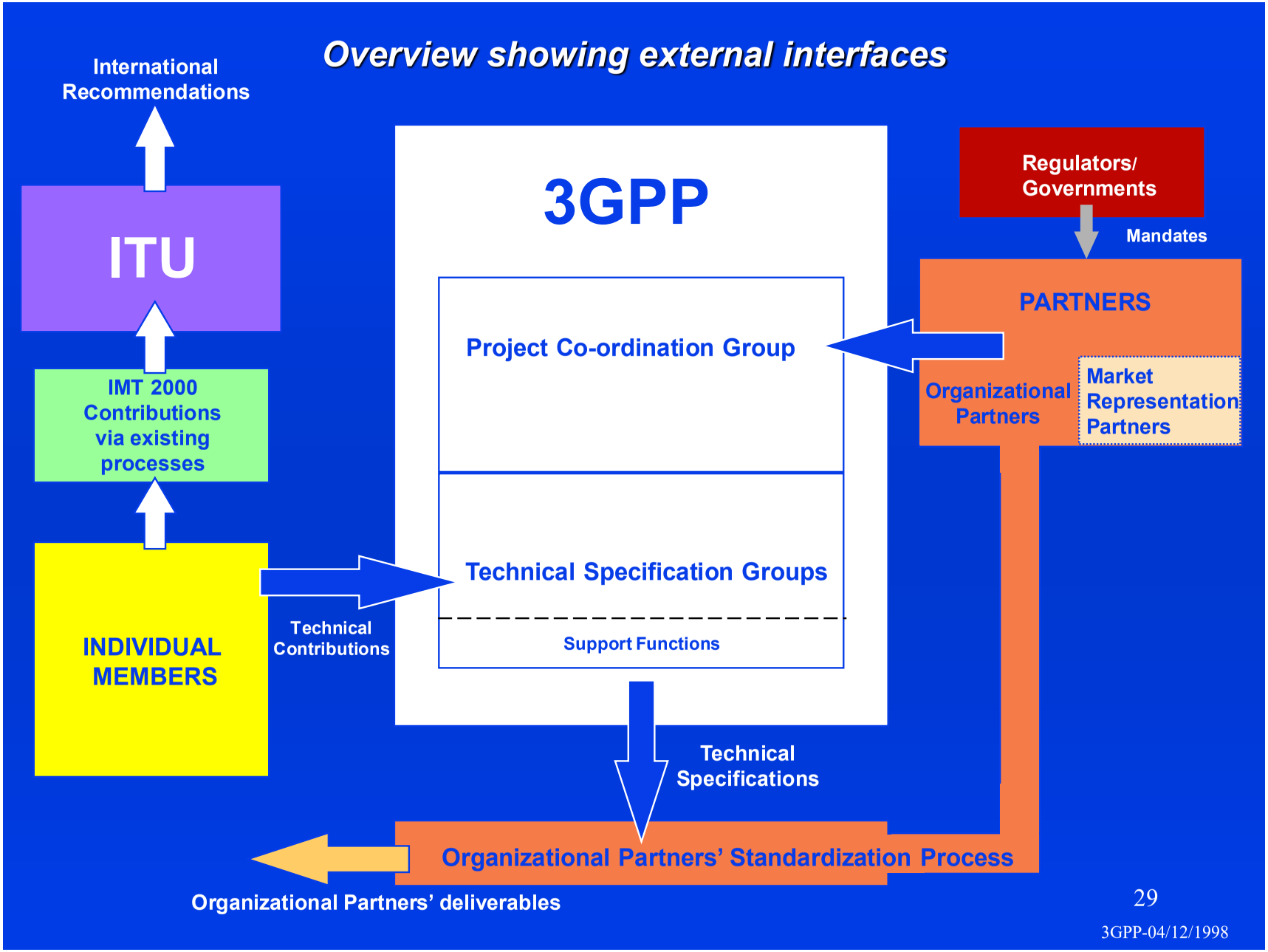
ETSI will absorb the initial cost of establishing the 3GPP, if required.

Thereafter, the costs will be shared by the Organizational Partners. There will be no direct 3GPP membership fee for Individual Members.

Partners and Individual Members may provide support functions to the extent that they are able (eg hosting of meetings and provision of Secretariat support).

The longer term financial requirements are for further study.

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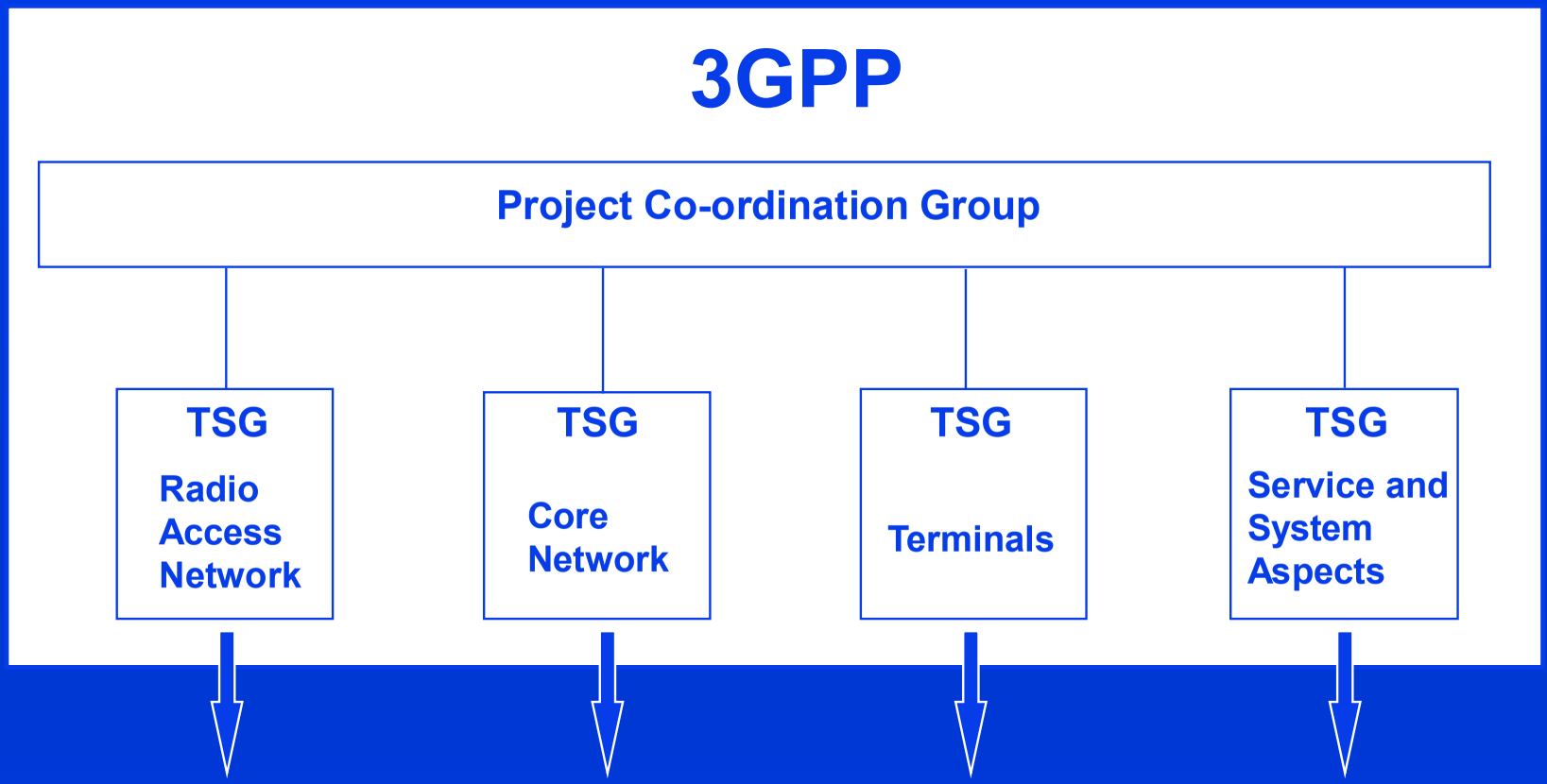
Internal structure of 3GPP (1)

3GPP consists of a Project Co-ordination Group (PCG) and Technical Specification Groups (TSGs).

To assist in the co-ordination of the technical activities, the TSGs are encouraged to meet at the same time and place, as and when appropriate (e.g. twice per year).

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Internal structure of 3GPP (2)



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Work areas to be covered by the Radio Access Network TSG

- Radio Layer 1 specification
- Radio Layer 2 specification
- Radio Layer 3 RR specification
- Iub specification
- Iur Interface
- Iu Interface
- UTRAN O&M requirements
- Base station radio performance specification
- Conformance test specification for testing of radio aspects of base stations
- Specifications for radio performance aspects from the system point of view

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Work areas to be covered by the Core Network TSG

- **Mobility management, call connection control signalling between the user equipment and the core network**
- **Core network signalling between the core network nodes. the signalling supports functionality such as user location information, subscription information and control of network services**
- **Definition of interworking functions between the core network and external networks**
- **Packet related questions such as mapping of QoS (e.g. transparency for IP domain applications, general for bearer types, special for optimized applications such as Voice over IP)**
- **Core network aspects of the Iu interface**
- **Core network O&M requiremnents**

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Work areas to be covered by the Terminal TSG

- **Service capability protocols**
- **Messaging**
- **Services end-to-end interworking**
- **USIM to Mobile Terminal interface**
- **Model/framework for terminal interfaces and services (application) execution**
- **Conformance test specifications of terminals, including radio aspects**

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Work areas to be covered by the Service and System Aspects TSG

- **Service capabilities**
  - **Definition of services and feature requirements**
  - **Development of service capabilities and a service architecture for cellular, fixed (and cordless) applications**
- **Stage one and two descriptions for:**
  - **Charging and accounting**
  - **Network Management**
  - **Security Aspects**
- **Architecture**
  - **Definition, evolution, and maintenance of overall architecture, including assignment of functions to particular sub-systems and identification of key information flows**
  - **In co-operation with other TSGs, define required services, service capabilities and bearer capabilities offered by the different sub-systems**
- **Codec aspects**
  - **Principles for definition of end-to-end transmission**
  - **Definition, evolution and maintenance of relevant specifications**
- **Project co-ordination**
  - **High level co-ordination of the work performed in other TSGs and monitoring of progress**

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Primary responsibilities of PCG and TSGs (1)

The primary responsibilities of PCG, TSGs and Organizational Partners are given in the following tables:

	Function	Org Partners collectively	PCG	TSGs
1	Approval of new Partners for 3GPP	X		
2	Approval of Organizational Partner funding requirements and contributions	X		
3	Allocation of human and financial resources provided by Partners to PCG	X		
4	Allocation of resources to TSGs		X	
5	Allocation of resources within TSGs			X

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Primary responsibilities of PCG and TSGs (2)

	Function	Org Partners collectively	PCG	TSGs
6	Allocation of voluntary human and financial resources by Market Representation Partners and Individual Members		X	X
7	Handling of appeals from Individual Members on procedural matters	2nd step	1st step	
8	Handling of appeals from Individual Members on technical matters		2nd step	1st step
9	Determine overall time frame and manage overall work progress		X	

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Primary responsibilities of PCG and TSGs (3)

	Function	Org Partner collectively	PCG	TSGs
10	Detailed time frame and manage detailed work progress			X
11	Approval of Technical Specifications			X
12	Proposal and approval of work items within the agreed scope and terms of reference			X
13	Final adoption of work items within the agreed scope and terms of reference		X	
14	Management of work items			X

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Primary responsibilities of PCG and TSGs (4)

	Function	Org Partners collectively	PCG	TSGs
15	Technical Co-ordination (System Aspects TSG will play a role here)			X
16	Appointment of Org Partners meeting Chairman (provided by host on a rotational basis)	X		
17	Appointment of PCG Chairman (for one year term)		X	
18	Election of TSG Chairman and Vice Chairmen			X
19	Creation of TSGs and approval of their terms of reference	X		

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Primary responsibilities of PCG and TSGs (5)

	Function	Org Partners collectively	PCG	TSGs
20	Creation of TSG working groups and approval of their terms of reference			X
21	Election of TSG Working Group Chairmen and Vice Chairmen			X
22	Confirmation of individual member participation rights	X		
23	Approval of 3GPP scope and terms of reference	X		
24	Maintain Partnership Project Agreement, Project Description and Working Procedures (consensus agreement by all Partners)	X		

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Participation rights in PCG and TSGs

The following have a right to participate in the PCG:

- **Representatives of participating Organizational Partners**
- **Representatives of participating Market Representation Partners**
- **Chairman and Vice Chairmen of the TSGs, as ex-officio members**

The following have a right to participate in the TSGs :

- **Representatives of members of participating Organizational Partners (i.e. Individual Members)**
- **Representatives of participating Organizational and Market Representation Partners**

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Principles for decision making within 3GPP

Decision making within PCGs

- **By consensus amongst the Organizational Partners**
- **By vote amongst the Organizational Partners in unavoidable cases**

Decision making within TSGs

- **By consensus amongst the Individual Members**
- **By vote amongst the Individual Members in unavoidable cases**

The Organizational Partners will conduct a fairness review of the decision making process six months after 3GPP start-up, taking into account all concerns raised

(Note: voting will not be permitted on National/Regional regulatory requirements)

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Principles for voting within TSGs

The following principles will be applied for voting within the TSGs

- **One "Individual company Member", one vote**
- **Organizational Partners to interpret " Individual company Member" according to its own rules of membership**
- **The PCG will maintain a register of eligible voters for the TSGs**
- **Each Individual Member may carry the proxy for up to five other Individual Members**

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Working language for 3GPP

The working language for 3GPP shall be English

- **Meetings of the PCG and TSGs shall be conducted in English**
- **3GPP Technical Specifications shall be prepared in English**

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Relationship with other groups

3GPP will establish and maintain good relationships with groups working on standards for other IMT-2000 family members.

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Intellectual Property Rights (IPR) Principles (1)

The Individual Members of 3GPP are bound by the IPR Policies of their respective Organizational Partner.

Individual Members are encouraged to declare at the earliest opportunity, any IPRs which they may have and believe to be essential, or potentially essential, to any work ongoing within 3GPP.

After comparing their respective IPR policies, ARIB, ETSI, T1, TTA and TTC have agreed that their IPR policies share common principles are quite similar and have agreed on the following additional principles to maximize the success of 3GPP.

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Intellectual Property Rights (IPR) Principles (2)

(i) **To encourage their respective members' declaration of willingness to grant licences on fair, reasonable terms and conditions on a non-discriminatory basis, and consistent with the respective Organizational Partners' IPR policies.**

(ii) **To encourage their respective members who may have IPR which they believe to be essential, or potentially essential, and are unwilling to license such IPR, that early indication of such unwillingness be provided to their respective Organizational Partners.**

(iii) **To understand that essential IPRs mean essential IPRs relative to any or all parts of the content of the 3GPP technical specifications.**

(iv) **A mechanism for exchanging information associated with the patent statement among the Organizational Partners will be introduced so that such information may be used when adopting relevant standards in each Partner Organization.**

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Appendix 3

About / Introducing 3GPP

Introducing 3GPP



The 3rd Generation Partnership Project (3GPP) unites seven telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC), known as “Organizational Partners” providing their members with a stable environment to produce the Reports and Specifications that define 3GPP technologies.

3GPP specifications cover cellular telecommunications technologies, including radio access, core network and service capabilities, which provide a complete system description for mobile telecommunications. The 3GPP specifications also provide hooks for non-radio access to the core network, and for interworking with non-3GPP networks

The Project’s Scope

The original scope of 3GPP (1998) was to produce Technical Specifications and Technical Reports for a 3G Mobile System based on evolved GSM core networks and the radio access technologies that they support (i.e., Universal Terrestrial Radio Access (UTRA) both Frequency Division Duplex (FDD) and Time Division Duplex (TDD) modes).

The scope was subsequently amended to include the maintenance and development of the Technical Specifications and Technical Reports for evolved 3GPP technologies, beyond 3G.

- The latest 3rd Generation Partnership Project Agreement (Annex 42).
- The discussions that led to the signing of the 3GPP Project Agreement were recorded in a series of slides called the “Partnership Project Description” that describes the basic principles and ideas on which the project is based. The document has not been maintained since its first creation, but the principles within do still remain valid.

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Organizing the work

The 3GPP Working Procedures are the rule book of 3GPP, with sections covering:

- Description, Purpose, Scope and objectives
- Participation
- Structure
- Partners' collective responsibilities
- Project Coordination Group (PCG)
- Technical Specification Groups (Incl. Elections)
- Work Programme & technical co-ordination
- Deliverables (Technical Specifications and Technical Reports)
- Reporting

The 3GPP production of specifications and studies (TRs) are contribution-driven, by member companies, in Working Groups and at the Technical Specification Group (TSG) level. The Technical Specification Groups in 3GPP are:

- Radio Access Networks (RAN)
- Services & Systems Aspects (SA)
- Core Network & Terminals (CT)

The Working Groups, within the TSGs, meet regularly and come together for their quarterly TSG Plenary meeting, where their work is presented for information, discussion and approval. The last meeting of the week of TSG Plenary meetings is TSG SA, which also has responsibility for the overall coordination of the technical work and for the monitoring of its progress.

Generational Approach

The 3GPP technologies from these groups are constantly evolving through Generations of commercial cellular / mobile systems (see table below). With LTE and 5G work, 3GPP has become the focal point for the vast majority of mobile systems beyond 3G.

Although these Generations have become an adequate descriptor for the type of network under discussion, real progress on 3GPP standards is measured by the milestones achieved in particular Releases. New features

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are 'functionality frozen' and are ready for implementation when a Release is completed. 3GPP works on a number of Releases in parallel, starting future work well in advance of the completion of the current Release. Although this adds some complexity to the work of the groups, such a way of working ensures that progress is continuous & stable.

Backward Compatibility

The major focus for all 3GPP Releases is to make the system backwards and forwards compatible where possible, to ensure that the operation of user equipment is uninterrupted.

For 5G, many operators are starting with dual connectivity between LTE and 5G NR equipment – using the 'Non-Standalone' work completed early in Release 15. In the process of completing the early drop of 5G NR care has been taken to build 'forward compatibility' into Non-Standalone NR equipment, to ensure that it will be fit for use on Standalone 5G NR systems.

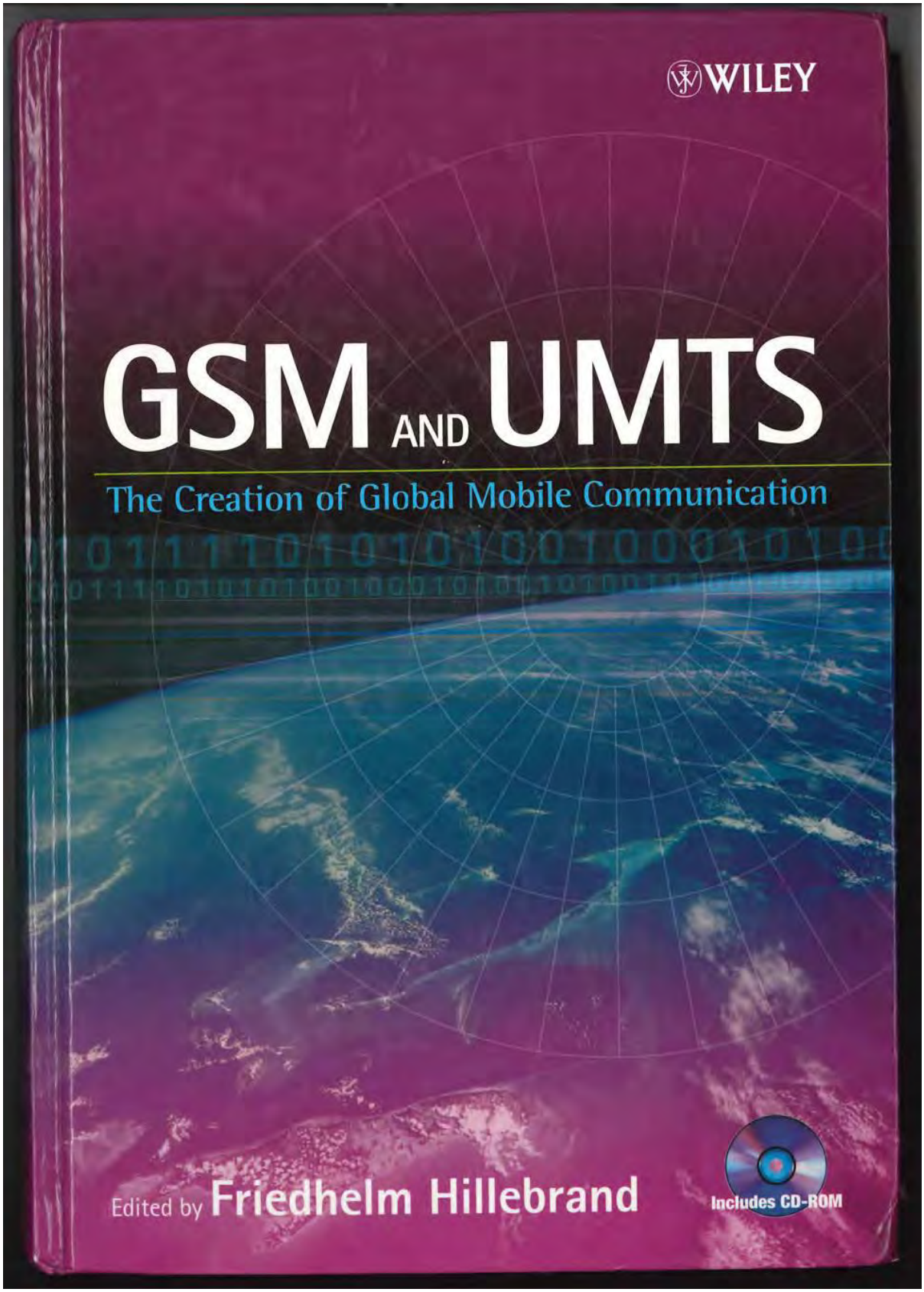
For details of the contents of each Release, see the appropriate 'Release Description' document or go to our dedicated Release page.

Details of all 3GPP Work Items are in the 3GPP Work Plan, which provides details of the cooperation between all of the 3GPP groups on "Features", defined as 'new or substantially enhanced functionality which represents added value to the existing 3GPP system'.

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Appendix 4



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GSM and UMTS

The Creation of Global Mobile Communication

Edited by

Friedhelm Hillebrand
Consulting Engineer, Germany

With contributions from 37 key players involved in the work for GSM and UMTS



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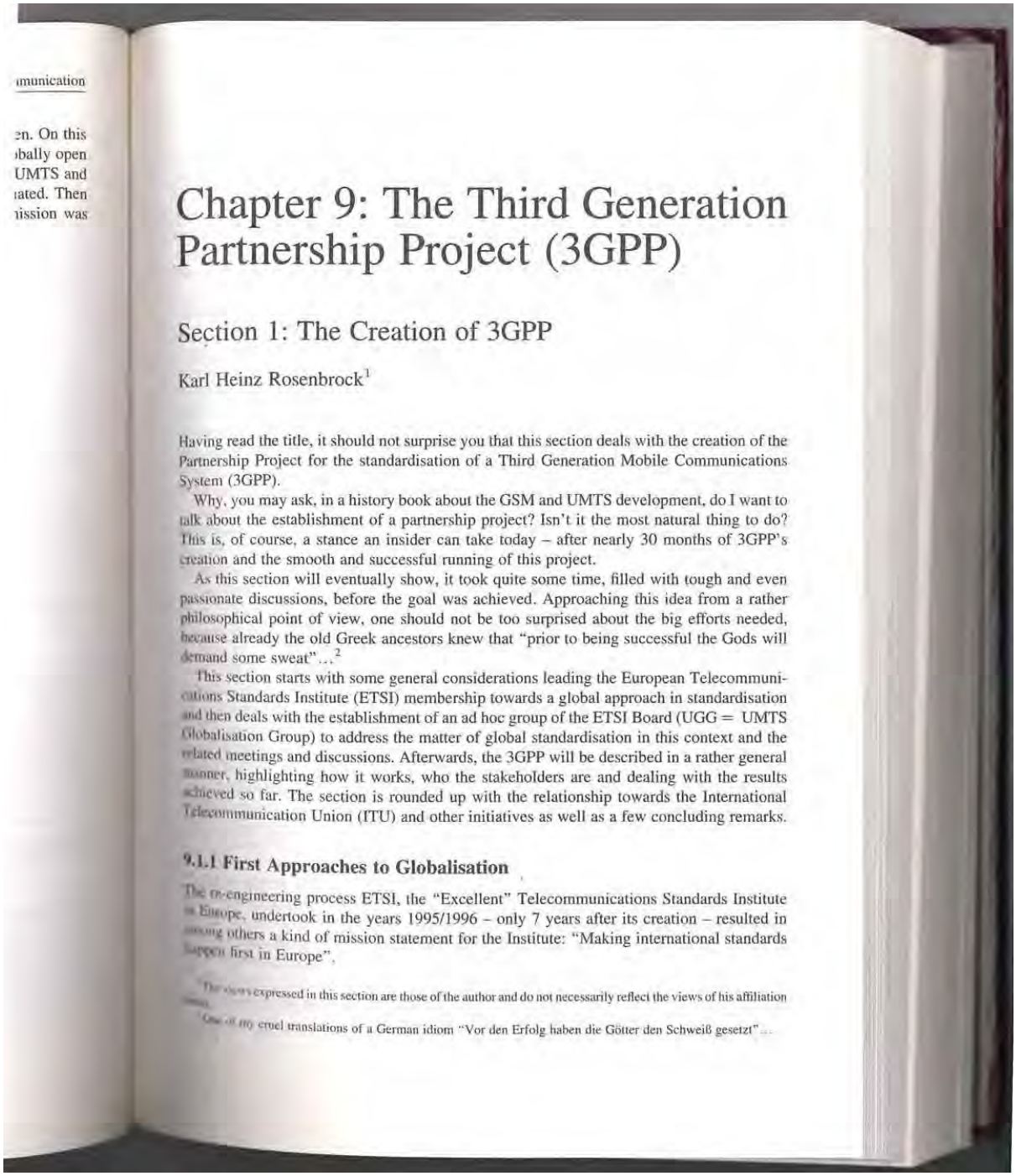
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Chapter 9: The Third Generation Partnership Project (3GPP)

Section 1: The Creation of 3GPP

Karl Heinz Rosenbrock[1]

Having read the title, it should not surprise you that this section deals with the creation of the Partnership Project for the standardisation of a Third Generation Mobile Communications System (3GPP).

Why, you may ask, in a history book about the GSM and UMTS development, do I want to talk about the establishment of a partnership project? Isn't it the most natural thing to do? This is, of course, a stance an insider can take today – after nearly 30 months of 3GPP's creation and the smooth and successful running of this project.

As this section will eventually show, it took quite some time, filled with tough and even passionate discussions, before the goal was achieved. Approaching this idea from a rather philosophical point of view, one should not be too surprised about the big efforts needed, because already the old Greek ancestors knew that "prior to being successful the Gods will demand some sweat"...[2]

This section starts with some general considerations leading the European Telecommunications Standards Institute (ETSI) membership towards a global approach in standardisation and then deals with the establishment of an ad hoc group of the ETSI Board (UGG = UMTS Globalisation Group) to address the matter of global standardisation in this context and the related meetings and discussions. Afterwards, the 3GPP will be described in a rather general manner, highlighting how it works, who the stakeholders are and dealing with the results achieved so far. The section is rounded up with the relationship towards the International Telecommunication Union (ITU) and other initiatives as well as a few concluding remarks.

9.1.1 First Approaches to Globalisation

The re-engineering process ETSI, the "Excellent" Telecommunications Standards Institute in Europe, undertook in the years 1995/1996 – only 7 years after its creation – resulted in among others a kind of mission statement for the Institute: "Making international standards happen first in Europe".

[1] The views expressed in this section are those of the author and do not necessarily reflect the views of his affiliation company.

[2] One of my cruel translations of a German idiom "Vor den Erfolg haben die Götter den Schweiß gesetzt"...

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- unanimously requested the ETSI Board (through its UMTS Globalisation Group) to complete the negotiations with potential partners and to oversee the creation of the Partnership Project;
- unanimously requested the ETSI Board to agree and maintain on behalf of ETSI the final versions of the Partnership Project Description, the Partnership Project Working Procedures, and the Partnership Project Agreement;
- unanimously authorised the director-general to sign the Partnership Project Agreement.

9.1.2.4.14 Happy End in Copenhagen

It was in Copenhagen where the last 3GPP preparatory meeting with all six OPs took place on 2–4 December 1998.

Here, the final fine-tuning of the 3GPP documentation was achieved. In addition, the 3GPP agreement[8] was signed (in a nice framework provided by the host, TeleDenmark) by the following OPs: ARIB, ETSI, T1, TTA, and TTC.

Unfortunately, the partners from CWTS (China) were not authorised to sign the 3GPP agreement yet. Furthermore, owing to the fact that the UMTS Forum was unable to participate in Copenhagen, they were prevented from co-signing the 3GPP agreement as a first Market Representative Partner (MRP).

During that Copenhagen meeting, another discussion ensued about the role the MRPs should play. Finally, it was concluded that the high competence of MRPs should be used in order to identify market requirements, thus enabling 3GPP standardisation to meet the needs of the market. An MRP is an organisation invited by the OPs to participate in 3GPP with the objective of offering market advice to 3GPP and to bring into 3GPP a consensus view of market requirements.

9.1.3 What is 3GPP?

The 3GPP is a global standardisation initiative created in December 1998. Its task was to develop a complete set of globally applicable Technical Specifications for a third generation (3G) mobile telecommunications system based on the evolved GSM core network and an innovative radio interface known as UTRA. The Project is based on a concept devised by ETSI aimed at facilitating better co-operation between regional standards organisations, fora and other industry groupings. 3GPP is a collaborative activity between officially recognised SDOs, with the participation of other industry groups and individual members.

Partnership in 3GPP is open to all national, regional or other SDOs, irrespective of their geographical location – within the project the participating SDOs are referred to as OPs. The OPs may invite MRPs to participate: these may be any organisation from anywhere in the world that can offer market advice to 3GPP and bring a consensus view of market requirements that fall within the project's scope. Individual membership is open to companies and organisations within the communications industry that are active members of one of the OPs. The truly global nature and the breadth of the market interest in the task of specifying this 3G system is evident from the identity of the 3GPP partners (see further in sub-paragraph 9.1.3.2) and all agree that 3GPP is proving a highly successful initiative.

[8] The 3GPP Agreement and the 3GPP Project Description can be found on the attached CD-ROM in [illegible]

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The 3GPP has no legal status. Ownership (including copyright) of the specifications and reports it produces is shared between the partners. The 3GPP process includes a conversion (transposition) of the project's output into official standards and reports by one or more of the OPs.

The specifications being prepared by 3GPP are evolved in part from the enormously successful GSM standard, which is currently (February 2001) serving over 400 million subscribers in more than 140 countries. Building on this massive installed base, the system being specified by 3GPP will be an attractive upgrade path for existing operators and users. It also has an assured compatibility with GSM – good news for both operators and users who are unable, or unwilling, to upgrade to 3G.

Paramount among the 3GPP specifications is the definition of UTRA, the innovative radio access technology that is the key to the new system's high data rates and dramatically improved performance. UTRA is spectrum-efficient and supports FDD and TDD modes. This interface has been accepted by ITU as a member of the IMT-2000 family – or more correctly, as *two* family members: IMT-DS, the FDD mode; and IMT-TC, the TDD mode. IMT-2000 family membership requires the ability for users to roam globally and seamlessly, which implies interoperability with other family members: 3GPP thus co-operates closely with the 3GPP2 project which is specifying another family member, a 3G CDMA system based on an evolution of the ANSI-41 architecture.

9.1.3.1 How Does 3GPP Work?

3GPP has been designed to minimise delays and inefficiencies. As a result, it has a "flat" organisational structure and a large degree of distributed autonomy. Overall project planning and co-ordination is the responsibility of the PCG, with input primarily from the OPs, guided by the MRPs. It is mainly at this level that regulatory requirements, provided by the telecommunications administrations and governments around the world, are taken into account.

The development of the specifications is performed by TSGs and their subordinate working groups. Here, the main participation is by technical experts from the individual members of the OPs. Individual members in their capacity as ITU members are also responsible for carrying the results of the 3GPP work to the ITU.

At the time of the creation, 3GPP had structured around four principal aspects of the 3G system being defined as TSGs:

- TSG CN: core network
- TSG RAN: radio access network
- TSG SA: services and systems aspects
- TSG T: terminals

Each TSG is authorised to develop and approve specifications and reports within its scope, and TSG SA also has a role of co-ordinating the work of the TSGs at a more detailed level than the PCG. The result is a process that is able to rapidly produce and approve specifications and reports in response to the needs of the market, although it is important to note that the deliverables do not have a formal status until they have been transposed by one or more of the OPs.

The formal status is necessary for regulatory and other purposes in the various regions, and all the OPs have committed themselves to complete this process rapidly. Each OP will apply

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its own procedures, appropriate to their respective regions. As the official European SDO within 3GPP, ETSI recognises the 3GPP output as ETSI Technical Specifications and ETSI Technical Reports without a need for any further endorsement within the Institute. This means that the 3GPP documents are published – within a matter of a few weeks – as identical text directly as ETSI deliverables. In addition, ETSI is transposing, i.e. adapting, a few of the initial 3GPP specifications into ENs for specific European regulatory requirements. This is happening in parallel with the publication of the initial Technical Specifications and will not impede the implementation of 3G in Europe.

9.1.3.1.1 Electronic Working

3GPP has taken a leading role in changing the traditional ways of standards making. A very heavy dependence is now placed on electronic working, both outside and within meetings, advancing a trend that started in ETSI a year or two ago. This means that paper copies of draft documents have been almost entirely eliminated, saving time and expense, and making a significant contribution to the environment.

Given that 3GPP has participants from all over the world, the use of the Internet, e-mail exploders and other such facilities have proved invaluable for distributing and sharing information, working drafts and so on. Delegates to meetings had already become used to downloading working documents from the Internet and having updates to the documents distributed in meetings on CD-ROM. But in recent months, in meetings around the world participants have experienced the benefits of a local area network (LAN) solution as the latest step in improving working methods. ETSI's headquarters premises already have LANs in all its meeting rooms, but most other venues currently rely on temporary LANs (wired or radio) using equipment and support kindly donated by individual members.

Such facilities permit delegates to access all the meeting documents electronically from their laptop computers. As a result, the huge burden of producing paper copies (as many as 10 000 pages per delegate for some meetings) can be eliminated. Delegates can access new documents as soon as they are available, rather than having to wait for paper copies to be made or for the documents to be distributed by other means, such as diskette or CD-ROM.

9.1.3.1.2 Project Support

For administrative and support purposes the 3GPP Partners have established a Mobile Competence Centre (MCC) which is hosted by ETSI at its premises in Sophia Antipolis, Southern France. The MCC was created in March 1999 to provide support not only to the 3GPP but also to ETSI's own studies in mobile technologies. A full description of MCC including the financing is given in Chapter 15, Section 3.

9.1.3.2 Who are the Stakeholders in 3GPP?

3GPP has attracted a very strong commitment from organisations and companies around the world, reflecting the truly global nature of the project. There are currently six OPs (in alphabetical order):

- The Association of Radio Industries and Businesses (ARIB), Japan

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being TD-SCDMA, proposed by CWTS. A similar group, 3GPP2, is preparing the cdma2000 specifications, UWC-136 TDMA specifications are being developed principally by UWCC, and DECT specifications are defined by a set of ETSI standards (Figure 9.1.1).

Since the UWCC and ETSI are both partners in 3GPP (as an MRP and OP respectively), there is direct liaison between the Project and these two sources of specifications for other IMT-2000 family members.

When 3GPP and 3GPP2 were created it was felt that the interests of each group were sufficiently different to require them to remain separate but here again many of the OPs and MRPs are common to both groups, so there are natural channels for information exchange. Particular instances of formal co-operation between the groups were the two joint 3GPP-3GPP2 workshops held in 1999 to address the "Hooks and Extensions" issue aimed at ensuring interworking between the respective technologies.

In addition to all this, the 3GPP TSGs and their working groups are encouraged to liase directly with relevant technical bodies within the Project as well as among the Partners.

9.1.6 Conclusions

The attentive reader, and let's assume that you are one, may still be astonished to learn what big efforts have been necessary in order to establish 3GPP.

In the meantime, i.e. in the course of year 2000 nearly the whole work of the former ETSI TC SMG has been incorporated into 3GPP, to a large extent within the new TSG GERAN.

Well, our Japanese friends were not happy about this shift because they feared that it could result in delays in the 3G introduction in their country. They accepted this because a separate TSG for the GSM work was created.

Trying to recall the heated discussions within ETSI about the scope of 3GPP from 1998, one has to admit that such a move would have been violently rejected by a lot of ETSI members, maybe even by the majority. Using a philosophic approach, one can, of course, state that time helps healing (even wounds).

Today, i.e. February 2001, we can conclude from ETSI's point of view that all standardisation work related to further evolution of the second generation mobile system, i.e. GSM, and to UMTS is being done well within 3GPP. Thus, the objective to avoid parallel work within ETSI TBs and 3GPP has been fully achieved.

The ability of organisations and individuals around the world to co-operate and make available a full set of stable, agreed 3GPP specifications in 1 year is a remarkable achievement, one that is unprecedented in the world of standardisation. 3GPP meetings have taken place in many parts of the world, emphasising the strong commitment of the SDOs from China, Europe, Japan, Korea and the US. The MRPs have also lent very strong support to the work. Thanks to this widespread and determined commitment it has been possible to meet the very aggressive targets for 3G.

But Release 99 was only the first step – the workload has continued to intensify this year, as the initial specifications are refined and many new ones added, opening the path to full, seamless, global 3G services, changing forever the way that people communicate.

In the meantime, 3GPP has changed the designation of the releases and dropped to mention the year in order to avoid irritations and wrong expectations. Release 99 was first established in December 1999 and got its maturity in the course of year 2000. In 2000, more than 5700 change requests were implemented. The next big event will be Release #4 as a result of the

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series of TSG meetings scheduled for March 2001 in Palm Springs, US. This will obviously result in a further stabilisation and extension of the UMTS specifications.

3GPP is running very well. The individual members from the six OPs seem to be very satisfied with this arrangement – and the production line is in full swing.

Without exaggeration, one can give 3GPP the attribute of a success story. One may quote again here Mr Ed Roney who even addressed the 3GPP concept – prior to its realisation – as a "paradigm shift".

As the results of the GSM and UMTS related standardisation work represent a great part of ETSI's deliverables, it might be justified to note here that during the year 2000, ETSI published more than seven new deliverables each working day (Monday through Friday), i.e. one deliverable per hour!

Further information may be found on the 3GPP website at http://www.3gpp.org.

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Chapter 9: The Third Generation Partnership Project (3GPP)

Section 2: UMTS in 3GPP (December 1998–May 2001)

Niels Peter Skov Andersen[1]

9.2.1 A Change of Environment

In the period 1982 until end of 1998 the work on the GSM standard, and in the later part of the period on UMTS, had been performed in the same environment, starting under CEPT and later transferred into ETSI. The Technical Committee GSM, during this period renamed to SMG, and its working groups (Sub Technical Committees) had continuously existed and evolved. The same was the case for the working methods and procedures used within the work. Over time with the success of the GSM system more and more interested parties became involved in the work including parties from outside the original CEPT area. However, this was all a relatively slow evolution and no major revolutions in the organisation or the working methods occurred in this period.

After all these years of continuity in the work the discussions around the creation of 3GPP and the decision to establish 3GPP for the initial phase of UMTS[2] naturally created some uncertainty amongst the members of SMG. Especially the resulting split of the GSM standardisation, with the responsibility for the GSM core network transferred to 3GPP, but the responsibility for the GSM radio access Network maintenance remained in ETSI in SMG. This caused some concern amongst many delegates. Also the internal structure for the technical work within 3GPP was different from the well-known structure in SMG. SMG was based on a technical plenary with a number of working groups (SMG1, SMG2, …, SMG12) performing the detailed technical work. The SMG plenary was the approving authority for the results of the work performed by the working groups. Also the plenary was the group responsible for approval of all new work items and the content of the releases. The structure for the work in 3GPP, as agreed by the partners, was quite different. The project

[1] The views expressed in this section are those of the author and do not necessarily reflect the views of his affiliation [illegible].

[2] The term UMTS is throughout this section used to keep consistency of terminology with the other chapters and [illegible]. The term UMTS do not appear in the in 3GPP agreement, which defines the system as a third generation [illegible] system based on an evolved GSM core network and UTRAN (including UTRAN (FDD and TDD modes)).

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was organised with four equal Technical Specification Groups (TSGs), who had complete autonomy for their area of responsibility, i.e. they were responsible for approval of new work items and final approval of deliverables. The four technical groups originally defined were:

TSG CN	Responsible for the core network development
TSG-RAN	Responsible for the radio access network based on UTRAN (FDD and TDD modes)
TSG-SA	Responsible for services and system aspects
TST-T	Responsible for Terminal and UIM

In addition to the technical groups the 3GPP organisation has a Project Coordination Group (PCG). However, the role of this PCG cannot be compared to the role the SMG plenary played. The SMG plenary was an open technical group with the approving authority in all technical questions including approval of new work items. The 3GPP PCG is a closed group with a defined membership consisting of a limited number representative of each of the partners (SDOs, MRPs) and the leadership (chairman and two vice-chairmen) of each TSG. Thus as a closed group the role of the PCG becomes more like a board overlooking the overall well being of the project.

This structure made many long-term SMG delegates concerned about how the overall coordination of the project could be ensured. This new structure was not introduced to overcome known deficits of the SMG organisation, but in my opinion, by political considerations to ensure than no single individual, individual member, organisational partner could obtain a controlling position in the project.

9.2.2 The First Two TSG Meetings

The inauguration meeting of the 3GPP TSGs was held in December 1998 in Sophia Antipolis, France. In the process of creation of 3GPP this was the first time that the 3GPPs real work force – the technical experts – met. The main objectives for this first meeting was to get the work started. One of the elements of the meeting was a presentation from the different partners on the status of their work on the third generation mobile system, the work which they now were in the process of handing over to 3GPP.

Listening to the presentations and the discussions during the breaks it was very obvious that the background for standardization amongst the delegates was quite different. As an example, I remember that during the coffee break just after I, as chairman of ETSI SMG2, had presented the status of the UMTS radio work in ETSI, and had ended my presentation by stating that the UMTS radio work would only be on the agenda of one more meeting of ETSI SMG2. This was in order to complete the documentation to be handed over to 3GPP and then the work on UMTS radio in ETSI would cease, a small group of non-ETSI delegates came to me and asked "if all work on UMTS radio in ETSI ceases, how do the Europeans then coordinate their views on 3GPP?" Coming from the ETSI SMG background this was a completely unexpected question, as the working procedures for 3GPP were very similar to those of ETSI, it was clear to me that the contributions to 3GPP in general should come from the individual members – the companies, regulators etc. – in their own name and not as regional contributions. I explained this, but I also understood that for delegates with a background in international standardization from, e.g. ITU this was the normal way of thinking. During

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Annex 2: Organisation Evolution of the Technical Groups

Section 3: 3GPP

Adrian Scrase[1]

A2.3.1 December 1998 to Mid-1999

During the preparatory talks that led to the creation of 3GPP, many discussions took place to find the optimum organizational structure. The ETSI TC SMG model had worked well for many years and it was very tempting to adopt a similar structure and just widen the sphere of participation. However, some voices called for a more radical approach in order to streamline the structure and to reduce the time taken for specifications production. As a result of these discussions, the following key principles were established on which 3GPP was structured:

- Minimum number of hierarchical levels;
- Large degree of distributed autonomy;
- Clear separation of technical activities from political and administrative activities.

When 3GPP was created, four Technical Specification Groups (TSGs) were formed to undertake the preparation of technical specifications. The four TSGs were as follows:

- TSG CN – core network
- TSG RAN – radio access network
- TSG SA – services and system aspects
- TSG T – terminals

Each of the TSGs was authorized to develop and approve specifications and reports within its terms of reference. This represented a departure from the more traditional approach where a single entity (i.e. a plenary) within a project has the authority to approve a project's output. It was believed that by distributing the approval authority, the time taken to produce specifications would be reduced since this effectively removes one level of hierarchy from the approval procedure. However, it was apparent from the outset that distributing the approval of specifications would lead to a greater requirement for technical co-ordination and thus TSG SA was tasked to perform a co-ordination role across all TSGs. This co-ordination role

[1] The views expressed in this section are those of the author and do not necessarily reflect the views of his affiliation entity.

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Appendix 5



Third Generation Partnership Project

3GPP

Working Procedures

01 September 2022

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Foreword

These Working Procedures of the Third Generation Partnership Project (3GPP) are effective from 01 September 2022.

An electronic version of these Partnership Project Working Procedures is available from the following address:

http://www.3gpp.org

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SECTION A: GENERAL

Article 1: Description

The Partnership Project is not a legal entity but is a collaborative activity between the following recognized Standards Development Organizations:

ARIB (Japan)

CCSA (China)

ETSI (Europe)

ATIS (US)

TTA (Korea)

TTC (Japan)

TSDSI (India)

The Partnership Project is entitled the "THIRD GENERATION PARTNERSHIP PROJECT" and may be known by the acronym "3GPP".

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Article 2: Purpose

The purpose of 3GPP is to prepare, approve and maintain globally applicable Technical Specifications and Technical Reports for

- a 3rd Generation Mobile System based on the evolved GSM core network, and the Universal Terrestrial Radio Access (UTRA),
- further development of radio technologies such as LTE, coupled with evolution of core network elements such as the Evolved Packet Core (EPC),
- continuing evolution of the 2nd generation GSM/EDGE Radio Access Network (GERAN),

to be transposed by the Organizational Partners into appropriate deliverables (e.g., standards).

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Article 3: Scope and objectives

The 3rd Generation Mobile System and its capabilities shall be developed in a phased approach. Initially, 3GPP shall prepare, approve and maintain the necessary set of Technical Specifications and Technical Reports for a 3rd Generation Mobile System including:

- UTRAN (including UTRA; in Frequency Division Duplex (FDD) and Time Division Duplex (TDD) modes);
- 3GPP Core Network (Third Generation networking capabilities evolved from GSM. These capabilities include mobility management, global roaming, and utilisation of relevant Internet Protocols);
- Terminals for access to the above (including specifications for a UIM); and
- System and service aspects.

3GPP shall prepare, approve and maintain the necessary set of Technical Specifications and Technical Reports for:

- the Global System for Mobile communication (GSM) including GSM evolved radio access technologies (e.g., General Packet Radio Service (GPRS) and Enhanced Data rates for GSM Evolution (EDGE)).

3GPP shall consider the long term evolution.

The Technical Specifications and Technical Reports shall be developed in view of global roaming and circulation of terminals.

The set of 3GPP Technical Specifications and Technical Reports for the 3GPP core network and the specifications for the GSM core network should be common to the greatest extent possible and should not be unnecessarily different.

Options in the form of a regulatory requirement particular to one or more regions / nations shall be included in 3GPP specifications. TSGs should not debate the inclusion or rejection of such options.

The results of the 3GPP work shall form the basis of member contributions to the ITU in accordance with existing procedures.

3GPP shall take account of emerging ITU recommendations on interworking between IMT-2000 family members.

In the framework of agreed relationships, the 3GPP Technical Specifications and Technical Reports will form the basis of standards, or parts of standards, of the Organizational Partners.

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SECTION B: PARTICIPATION

Article 4: Categories

Participation in 3GPP shall be classified into one of the following categories:

- Partners;
- Individual Members;
- ITU Representatives;
- Observers;
- Guests.

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Article 5: Partnership

Partners in 3GPP shall be classified into one of the following two categories:

- Organizational Partners;
- Market Representation Partners.

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Article 6: Organizational Partnership

Organizational Partnership is open to any Standards Organization, irrespective of its geographical location, which has:

- a national, regional or other officially recognized status and the capability and authority to define, publish and set standards within the 3GPP scope, in that nation or region;
- an Intellectual Property Rights (IPR) Policy which is compatible with those of the Organizational Partners;
- committed itself to all or part of the 3GPP scope;
- signed the Partnership Project Agreement.

Standards Organizations may apply to become an Organizational Partner by writing to any of the existing Organizational Partners.

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Article 7: Market Representation Partnership

The Organizational Partners may invite Market Representation Partners to take part in 3GPP.

An invitation for Market Representation Partnership is open to any organization, irrespective of its geographical location, which:

- has the ability to offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements (e.g., services, features and functionality) falling within the 3GPP scope;
- does not have the capability and authority to define, publish and set standards within the 3GPP scope, nationally or regionally;
- has committed itself to all or part of the 3GPP scope;
- has signed the Partnership Project Agreement.

Organizations may apply to become Market Representation Partners by writing to any of the existing Partners. Further guidance for MRP applicants can be found in annex E.

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Article 8: Individual Membership

Membership in an Organizational Partner is a pre-requisite for Individual Membership of 3GPP. All entities registered as members of an Organizational Partner and eligible for participation in the technical work of that Organizational Partner, can become Individual Members of 3GPP if they are committed to support 3GPP and:

- to contribute technically or otherwise to one or more of the Technical Specification Groups within the 3GPP scope;
- to use the 3GPP results to the extent feasible.

An Individual Member has the right to participate in the work of 3GPP by attending meetings of the Technical Specification Groups and subtending groups.

Applications for Individual Membership of a Technical Specification Group shall be made in writing to the relevant Organizational Partner using the form given at annex C. Applications may also be made on-line using the template available at http://www.3gpp.org.

Individual Members act in 3GPP in their own right and carry the full responsibility for their contributions.

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Article 9: Termination of Individual Membership

Individual Membership of 3GPP may be terminated by dissolution, abolition, resignation or expulsion from the related Organizational Partner.

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Article 10: Observers and Guests

The status of Observer may be granted by the Organizational Partners to an entity which has the qualifications to become a future Partner.

An Observer may send a single representative to an Organizational Partners or PCG meeting. An Observer may also have representatives at TSG meetings. Representatives of Observers may receive documents and contribute documents for information, but shall not submit documents that propose changes to the specifications, reports, work item descriptions, work plan, or any other document under the control of the TSG. Observers shall not take part in decision making or hold any leadership positions.

Additional participation rights of an Observer shall be decided by the Organizational Partners on a case-by-case basis.

The status of Guest may be granted for a limited period, by the Organizational Partners to an entity which has the qualifications to become a future Individual Member. The limited period shall be decided by the Organizational Partners on a case-by-case basis.

A Guest may have representatives at TSG and subtending group meetings. Representatives may receive documents but shall not take part in decision making, participate in discussions, contribute documents, or hold any leadership positions.

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SECTION C: STRUCTURE

Article 11: Structure of 3GPP

3GPP shall consist of a Project Co-ordination Group (PCG) and Technical Specification Groups (TSGs). The Technical Specification Groups may establish Working Groups if required.

The Organizational Partners may decide to call a meeting of the full 3GPP membership if required.

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SECTION D: PARTNERS' COLLECTIVE RESPONSIBILITIES

Article 12: Organizational Partners' Collective Responsibilities

The Organizational Partners shall determine the general policy and strategy of 3GPP.

In addition the Organizational Partners shall perform the following tasks:

- approval and maintenance of the 3GPP scope;

- maintenance of the Partnership Project Description;
- taking decisions on the creation or cessation of Technical Specification Groups, and approving their scope and terms of reference;
- approval of Organizational Partner funding requirements;
- allocation of human and financial resources provided by the Organizational Partners to the Project Co-ordination Group;
- acting as a body of appeal on procedural matters referred to them;
- conduct compliance training at least annually for elected leadership, relevant Support Team personnel and interested parties on best practices to follow to
  - avoid issues with respect to antitrust/competition laws and regulations;
  - fulfil the leadership/support role with impartiality and in the interests of 3GPP.

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Article 13: Collective responsibilities of all Partners

Organizational Partners and Market Representation Partners shall perform the following tasks:

- maintenance of the Partnership Project Agreement;
- approval of applications for 3GPP partnership;
- taking decisions relating to the dissolution of 3GPP.

top

SECTION E: PROJECT CO-ORDINATION GROUP (PCG)

Article 14: PCG tasks

The PCG shall perform the following tasks:

- appointment of PCG Chair and Vice Chairs;
- allocation of human and financial resources provided by Organizational Partners to TSGs;
- allocation of voluntary human and financial resources provided by Market Representation Partners and Individual Members;
- management of the 3GPP Support Team;
- handling of appeals from Individual Members on procedural matters referred to them;
- propose and approve modifications to the Partnership Project Working Procedures;
- handling of appeals from Individual Members on technical matters referred to them;
- determination of the overall time frame and manage overall work progress;
- final adoption of new and stopped work items proposed by the TSGs within the agreed 3GPP scope and objectives;
- when a work item is outside the scope of the 3GPP, and where a common global solution is desired, recommend how to achieve a global solution;

- appointment or dismissal of TSG Chairs and Vice Chairs, as proposed by TSGs based on election results. (The proposed candidate shall be appointed unless there are extraordinary reasons that prevent such an appointment, e.g., severe company or geographical imbalance within 3GPP. In such cases the TSG shall be requested to elect an alternative candidate. The decision not to appoint a candidate shall be made by consensus.);
- authorizing requests from the TSGs for approval to liaise with external organizations, and maintain a list of approved requests;
- maintenance of the register of Individual Members eligible to participate in 3GPP;
- maintenance of the register of IPR declarations relevant to 3GPP, received by the Organizational Partners.

The PCG may decide to call a meeting of the full 3GPP membership if required.

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Article 15: PCG participation

The following shall have a right to participate in the PCG:

- Typically, a maximum of five representatives of each Organizational Partner (not counting the Chair and Vice-Chairs);
- A maximum of three representatives of each Market Representation Partner. (MRPs are however urged to limit their participation to one representative wherever possible.);
- The Chairs and Vice Chairs of the TSGs as ex-officio members;
- A maximum of three ITU representatives;
- One representative of each Observer.

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Article 16: PCG appointment of Chair and Vice Chairs

The PCG shall appoint their Chair and Vice Chairs from amongst the Organizational Partner representatives.

The Chair and Vice Chairs shall be appointed for a one year term of office.

The Chair and Vice Chairs shall normally serve one term of office. If no other candidates are available, the Chair or Vice Chairs may be appointed for a further term.

Successive Chairs and Vice Chairs should not be from the same Organizational Partner, the same region or from the same group of companies, unless no other candidate is available.

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Article 17: PCG Chair and Vice Chair Responsibilities

The PCG Chair is responsible for the overall management of the co-ordination work within 3GPP.

The Chair has the overall responsibility to ensure that the Partnership Project Agreement, Partnership Project Description and Partnership Project Working Procedures are followed.

The Chair may nominate officials to assist in the work.

The Chair may be assisted by the Support Team.

The Chair may delegate tasks to the Vice Chairs.

In performing their leadership role, the Chair and Vice Chairs shall maintain impartiality and act in the interests of 3GPP.

At the commencement of each meeting of the PCG, the group shall be reminded that:

(i) compliance with all applicable antitrust and competition laws is required; and

(ii) the leadership will conduct the meeting with impartiality and in the interests of 3GPP.

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Article 18: PCG meetings

A meeting of the PCG shall be held at least twice per year.

At least thirty days before the due date, a calling notice, draft agenda and supporting documents shall be issued.

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Article 19: PCG decision making

In any meeting of the PCG, the quorum required for decision making shall be 50% of the total number of Organizational Partners. Proxies shall not be permitted.

The PCG shall endeavour to reach consensus on all issues. The views and opinions of the Market Representation Partners and the Chairs and Vice Chairs of the TSGs shall be taken into account during the consensus building process. If consensus cannot be achieved, the PCG Chair can decide to take a vote. The vote may exceptionally be performed by a secret ballot if decided by the PCG.

Each Organizational Partner shall have one vote. A proposal shall be deemed to be approved if 71% of the votes cast are in favour. Abstentions or failure to submit a vote shall not be included in determining the number of votes cast.

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SECTION F: TECHNICAL SPECIFICATION GROUPS

Article 20: TSG tasks

The TSGs shall prepare, approve and maintain the 3GPP Technical Specifications and Technical Reports taking into account the market requirements provided by Market Representation Partners.

The TSGs shall also perform the following tasks:

- Propose to the PCG for appointment TSG Chair and Vice Chairs based on election results;
- Creation of TSG Working Groups and approval of their terms of reference;
- When a new Working Group is created, the appointment of TSG Working Group Convenor;
- Allocation of resources within the TSG;
- Allocation of voluntary human and financial resources provided by Market Representation Partners and Individual Members;
- Handling of appeals from Individual Members on technical matters;
- Preparation of a detailed time frame and management of detailed work progress;

- Management of work items;
- Technical Co-ordination;
- Proposal and approval of work items within the agreed scope and terms of reference of the TSG;
- Where a work item is outside the scope of the 3GPP, but a common global solution is desired, recommend an approach to the PCG;
- Assignment of work to Partners. (Specification development may be accomplished using various methods, including the assignment of work to Partners.);
- Maintenance of the list of Individual Members eligible to vote within the TSG (Voting Members).

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Article 21: TSG participation

The following shall have a right to participate in the TSGs:

- Representatives of members of participating Organizational Partners (i.e. Individual Members);
- Representatives of Organizational Partners;
- Representatives of Market Representation Partners;
- Representatives of Observers;
- Representatives of Guests.

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Article 22: TSG and WG election of Chair and Vice Chairs

22.1 TSG elections

Regular TSG elections shall be held every two years in the first semester of odd numbered years.

The TSG Chair and Vice Chairs shall be elected by the Technical Specification Group from amongst the Individual Member representatives. Each TSG shall elect a maximum of three Vice Chairs.

A candidate for election to a TSG Chair or Vice Chair position shall provide a letter of support from the Individual Member that they represent. The support letter from the Individual Member shall indicate that the candidate will avail or has availed themselves of 3GPP supplied antitrust and competition law training in order to comply with all applicable antitrust/competition laws and regulations while acting in the capacity of TSG Chair or Vice Chair.

Nominations may be made up to the point when an election takes place.

The Chair and the Vice Chairs shall be elected for a two year term of office. The Chair and Vice Chairs may offer themselves for election for a second consecutive term. The term “consecutive” is taken to mean terms one after the other without another person being elected to the position in the interim. Exceptionally, they may offer themselves for further consecutive terms, subject to the following:

- A two week deadline that expires at noon Central European Time on the Friday which falls between 20 and 14 days prior to the first day of the meeting at which elections are due to be held shall be established.
- A Chair is not permitted to stand for another consecutive term if another candidate is announced via the 3GPP web site or via the relevant 3GPP email reflector prior to this deadline.
- A Chair is not permitted to stand for another consecutive term until after this deadline.

- A Vice Chair is not permitted to stand for another consecutive term in a Vice Chair position for which there is a candidate announced via the 3GPP web site or via the relevant 3GPP email reflector prior to this deadline.
- A Vice Chair is not permitted to stand for another consecutive term until after this deadline. If, by the deadline, the number of candidatures is less than the number of Vice Chair positions, then any incumbent Vice Chair may put forward their candidature.

There is no restriction on a Vice Chair whose term of office is due to expire offering himself for the position of Chair; neither is there any restriction on a Chair whose term of office is due to expire offering himself as a Vice Chair. There is no restriction of a retiring Chair or Vice Chair of one TSG offering himself for election as either Chair or Vice Chair of any other TSG (or WG).

Should the office of Chair or Vice Chair of a TSG become vacant for reasons other than expiration of term of office, a special election shall be conducted to fill the unexpired term. This special election shall be conducted at a meeting of the TSG, and shall be announced in the agenda according to the provisions of article 32.

When such a special election is held to fill the office of Chair, and one or more of the Vice Chairs of the TSG intends to stand for election to that position, the announcement shall also indicate that there will be an election to fill the position of Vice Chair in the event that a Vice Chair be elected to the office of Chair. If at the special election the Vice Chair is elected to the office of Chair, that individual shall become Chair immediately, and, the position of Vice Chair thus being vacant, an election shall be held for the office of Vice Chair.

Similarly, if an incumbent Chair intends to stand for election to the position of Vice Chair, the same applies, with the necessary changes to the text above.

If a Chair or Vice Chair changes the Individual Member that they represent (e.g., job change, merger or acquisition) during their term of office, a new letter of support shall be provided. In order to provide a new letter of support, a Chair or Vice Chair may request a grace period allowing their term to be extended the lesser of 6 weeks or until the day before the next scheduled regular term (e.g., every 2 years) election. Although the term is extended, under the rules of article 22, the Chair or Vice Chair can only chair meetings when representing an Individual Member. This rule continues to apply during the grace period. If the change of company affiliation is due to a move to another company, then the decision for the Chair or Vice Chair to continue in office to the end of the present term shall be made by consensus of the TSG. If consensus cannot be achieved, a special election shall be held for the office. The incumbent Chair or Vice Chair is permitted to offer their candidacy in a special election even if they have held the position for 2 terms or more.

The term of office for a Chair or Vice Chair elected at a special election is a partial term lasting until the end of the current term. If a new Chair or Vice Chair is elected at a special election then the partial term of office does not count towards the two consecutive term limit. If the previous Chair or Vice Chair is re-elected at a special election then the entire term (of two parts) is considered as a single term and does count towards the two consecutive term limit.

Chairs and Vice Chairs should not be from the same region, Organizational Partner, or from the same group of companies, unless no other candidate is available.

Successive Chairs should not be from the same Organizational Partner, the same region or from the same group of companies, unless no other candidate is available. This does not apply to special elections or to regular elections for a second or subsequent consecutive term of office .

When a new TSG is established, the Organizational Partners shall appoint a convenor for the first two TSG meetings. The election for TSG Chair and Vice Chairs shall take place at the second TSG meeting. If the election takes place other than at the normal time for TSG elections (see above), the elected Chair and Vice Chairs shall serve until the next regular TSG election. This partial term of office does not count towards the two consecutive term limit. The provisions of this paragraph may be overridden by consensus of the PCG where a new TSG is formed by the merger of existing TSGs; under these circumstances, the PCG shall establish a set of ad hoc rules for the creation of the new TSG.

Following election by the TSG, the TSG Chair and Vice Chairs shall be appointed by the PCG on the proposal of the TSG.

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22.2 WG elections

The provisions concerning the election of WG Chairs and Vice Chairs shall be as for TSG Chairs and Vice Chairs as defined in 22.1 above, changing TSG to WG wherever TSG is mentioned, with the following differences.

Each WG shall elect a maximum of two Vice Chairs.

WG elections shall be held when the corresponding terms of office expire or when an existing Chair or Vice Chair resigns. WG elections need not be synchronized within the WG (i.e. elections for Chair and each Vice Chair may occur at different times), across different WGs of the same or other TSGs, nor with the regular TSG elections.

WG Chairs and Vice Chairs are always elected for a period of two years (and not, as is the case with special elections in TSGs, for the unexpired period of the present term of office). An exception to this is where the previous Chair or Vice Chair is re-elected in the special election. In this case the Chair or Vice Chair continues for the unexpired period of the present term of office.

Note: For this reason, elections for WG Chairs and Vice Chairs are likely to become spread over a period of time, rather than being grouped like the TSGs' regular elections.

When a new WG is established, the parent TSG is responsible for appointing a convenor for the first two meetings.

Following election by the WG, the Chair and Vice Chairs hold office immediately, without need of appointment by TSG or PCG.

If a WG does not meet physically with enough frequency to maintain an up to date voting list, the working group may elect to escalate the voting for officers to the parent TSG.

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Article 23: TSG and WG Chair and Vice Chair responsibilities

The TSG Chair is responsible for the overall management of the technical work within the TSG and its Working Groups. The Chair has an overall responsibility to ensure that the activities of the TSG follow the Partnership Project Working Procedures.

The WG Chair is responsible for the overall management of the technical work within the WG and its sub-groups.

The Chair may nominate officials to assist in the work.

The Chair may delegate tasks to the Vice Chairs.

The Chair may be assisted by the Support Team.

The Chair shall form a Management Team, including the Vice Chairs and Support Team, in order to assist in discharging the Chair’s duties.

Recognizing the need to balance the requirement of rapid specification development with the limited resources of delegates, the Chair should encourage a minimum number of meetings, especially parallel meetings, and maximize the use of electronic means to advance the work.

In performing their leadership role, the Chair and Vice Chairs shall maintain impartiality and act in the interests of 3GPP.

At the commencement of each meeting of a TSG or WG, the group shall be reminded that:

(i) compliance with all applicable antitrust and competition laws is required;

(ii) timely submissions of work items in advance of TSG or WG meetings are important to allow for full and fair consideration of such matters; and

(iii) the leadership will conduct the meeting with impartiality and in the interests of 3GPP.

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Article 24: TSG and WG Chair and Vice Chair dismissal

A secret ballot shall be taken for the proposal to dismiss a TSG or WG Chair or Vice Chair because of a failure to effectively perform their duties, if requested by 30% of the TSG or WG membership list. 71% of the votes cast are required to recommend dismissal.

The PCG shall dismiss a Chair or Vice Chair on the proposal of the TSG.

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Article 25: TSG and WG decision making

TSGs and WGs shall endeavour to reach consensus on all issues, including decisions on Technical Specifications and Technical Reports. Informal methods of reaching consensus are encouraged (e.g., a show of hands). If consensus cannot be achieved, the Chair can decide to take a vote. The vote may exceptionally be performed by a secret ballot if decided by the TSG or WG. A vote may be conducted during a TSG or WG meeting or by correspondence.

A proposal shall be deemed to be approved if 71% of the votes cast are in favour. Abstentions or failure to submit a vote shall not be included in determining the number of votes cast.

It is the responsibility of the Chair to ensure that questions to be voted upon are phrased in a positive yes/no manner, with 71% required to approve the question. Questions should not be phrased as the TSG shall not do something. Examples of appropriate questions are; Shall the TSG approve the Specification and send it to the SDOs? Shall the liaison be approved? Shall the new WI be approved? Shall the existing WI be stopped? If the issue is to choose option A or B, the question should be split into two questions, with the Chair selecting the order. First, shall the TSG take option A as the way forward? If this question fails the second question is, shall the TSG take option B as the way forward?

Contributions on which decisions will be based should be made available in good time before each meeting. TSGs may establish informal guidelines for dealing with late contributions.

If a WG does not meet physically with enough frequency to maintain an up to date voting list, the working group may elect to escalate the voting to the parent TSG.

Working Agreements may be used to establish tentative agreements in cases where consensus cannot be obtained. The working agreement process is described in annex G.

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Article 26: TSG and WG voting during a meeting

The following procedures apply for voting during a TSG or WG meeting:

- before voting, a clear definition of the issues shall be provided by the Chair;
- Voting Members shall only be entitled to one vote;
- if a Voting Member has more than one representative present, only one representative may vote;
- each Voting Member may only cast the vote once;
- each Voting Member may carry proxy votes for up to five other Voting Members. All proxy votes shall be accompanied by a letter of authority from the authorising Voting Member. Proxies will not be taken into account when determining the quorum;
- the quorum required for voting during a TSG or WG meeting shall be 30% of the total number of Voting Member companies on the TSG or WG voting list;
- the result of the vote shall be recorded in the meeting report.

For the determination of the quorum, see annex H.

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Article 27: TSG or WG voting by correspondence

The following procedures apply for voting by correspondence:

- before voting, a clear definition of the issues shall be provided by the Chair and disseminated to all on the TSG or WG membership list;
- Voting Members shall only be entitled to one vote;
- each Voting Member may only cast the vote once within the voting period;
- the voting period shall be 30 days;
- there are no quorum requirements;
- The result of the vote should be disseminated to the TSG or WG.

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Article 28: TSG or WG voting for the election of TSG or WG Chair and Vice Chair

In the case where there is more than one candidate for TSG or WG Chair or Vice Chair, a secret ballot shall be used. For interpreting the result of the secret ballot the following procedure shall apply:

When, in the first ballot, no candidate has obtained 71% of the votes cast, a second ballot shall be held. In the second ballot, in cases where there are only two candidates, the candidate obtaining the higher number of votes is elected. In cases where there are more than two candidates, if none of them has obtained 71% of the votes, a third and final ballot shall be held among the two candidates who have obtained the highest number of votes in the second ballot. The candidate obtaining the higher number of votes in the third ballot is then elected.

The TSG or WG Chair shall be responsible for the voting process and shall ensure that confidentiality is maintained.

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Article 29: TSG or WG appeal process

An Individual Member of 3GPP who opposes a Chair's ruling on a vote taken within a TSG or WG may submit their case to the PCG for decision. In such cases the Individual Member shall also inform the relevant TSG or WG Chair.

When a TSG or WG Chair has made a ruling, their decision shall be taken as the basis for future operations, unless or until overturned by the PCG.

If an Individual Member in a TSG or WG believes that a Chair or Vice Chair of any such group is acting without impartiality and not in the interests of 3GPP, such Individual Member may object to such actions within the relevant group, and may request that such objection be recorded in the minutes of the applicable group meeting and it shall be so recorded. The objecting Individual Member may ultimately take their objection to the PCG for consideration. In such cases the Individual Member shall also inform the relevant TSG or WG Chair.

top

Article 30: TSG and WG meetings

TSGs and WGs shall meet as necessary to complete their work within the prescribed timeframe. TSGs should endeavour to hold their meetings at the same time and place to assist in the overall co-ordination of the work.

Meeting locations should reflect the geographical diversity of the TSG and WG delegates.

Further information on meetings is given in annex F.

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Article 30A: TSG and WG participation

IMs wishing to progress work on topics in 3GPP are expected to participate physically in the meetings.

If a 3GPP IM is materially interested in a specific topic but is unable to participate in a meeting by sending a delegate, the IM is urged to engage the support of other IMs whose delegates will be present at the meeting to present its views. If this is not possible for any reason, the IM may advise the Chair of the situation and may provide documents supporting their position. The Chair may facilitate the introduction of these documents during the meeting and the record of the meeting can include the discussion and outcome. Note that physical participation in meetings is considered the norm and the option to engage the Chair is intended for exceptional situations. The Chair has the right to decline the request.

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Article 31: TSG and WG meeting invitation

The invitation to a TSG or WG meeting and the necessary logistical information should be disseminated as soon as practically possible, taking into account the need to obtain travel documentation. It shall be disseminated at least 28 days before the meeting to all on the TSG or WG membership list.

top

Article 32: TSG and WG meeting agenda

The draft agenda for a TSG or WG meeting shall be disseminated by the responsible Chair to all on the TSG or WG membership list at least 21 days before a meeting. The draft agenda should indicate subject matters where voting may be required. The draft agenda shall indicate elections to be held (including known candidates). The draft agenda shall indicate the deadlines (dates and times) for registration and meeting document submission to the TSG/WG meeting. Other deadlines may also be indicated (whenever required).

top

Article 33: TSG and WG meeting registration

Delegates and officials must register before participating in any 3GPP meeting. Each delegate or official who represents an Individual Member shall declare the precise name of that Individual Member. A delegate or official may only register to represent one Individual Member.

The deadline for registration for all delegates and officials is one week in advance of the start of the meeting. Registrations after this deadline will still be processed, but timely receipt of meeting related information is not guaranteed for late registrants.

To aid in communication, delegates or officials at co-located meetings may briefly visit a meeting they have not registered for. However, any extensive involvement such as presenting a contribution or formally objecting requires prior registration to the meeting.

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Article 34: TSG and WG meeting document and file naming

Documents for a TSG or WG meeting shall follow a consistent numbering system as shown in the following example:

xminnzzzz

This numbering system has six logical elements:

1) **x**: a single letter corresponding to the TSG;

   where x : **R** (Radio Access Network)

   N (Core Network) [TSG closed March 2005]

   S (Service and System Aspects)

   T (Terminals) [TSG closed March 2005]

   G (GSM/EDGE Radio Access Network)

   C (Core network and Terminals)

2) **m** A single character corresponding to the Working Group identity (typically 1, 2, 3, etc) or, in the case of the TSG itself, the letter "**P**".

3) **i**: Normally the hyphen character "-". May take on other values depending on the nature of the meeting at which the document is presented, eg the identity of a subgroup.

4) **nn**: two digits to indicate the year, i.e. 99, 00, 01, etc;

5) **zzzz**: unique number of the document

No provision is made for the use of revision numbers. Documents which are a revision of a previous version should indicate the document number of that previous version.

The filename of documents shall be the document number. Documents may be compressed to .Zip files (and thus bear a file extension ".zip"). For example, document **S1-060357** will be contained in file **S1-060357.zip**.

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Article 35: TSG and WG Voting Membership List

35.1 Voting list

Each TSG and WG shall maintain a list of Individual Members eligible to vote in that group.

The voting list shall be used to establish quorum and for determining those eligible to take part in a vote.

NOTE 1: The term "membership list" has no particular significance in the context of TSG and WG meetings. The term "attendance list" is used for a list of individuals who attend a given meeting representing an Individual Member or other entity entitled to participate in meetings – see annex F.

For the determination of the quorum, see annex H.

top

35.2 On creation of new TSG or WG

When a new TSG or WG is formed an Individual Member is added to the voting list at the first meeting at which it is represented, and may vote at the second meeting where it is represented.

Exceptionally, if inadequate notice (less than the period of time given in article 31) had been given for the first meeting of the new group, an Individual Member shall be added to the voting list on its delegate's attending the second meeting (the election meeting) and vote at that meeting even if it had not been represented at the group's first meeting.

Only an Individual Member that had been represented at the group's first meeting may provide a proxy for the second meeting.

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35.3 Established TSGs and WGs

To qualify for the voting list it is necessary for at least one delegate of an Individual Member to attend at least two meetings of the group concerned, without being removed according to the provisions of article 35.4..

An Individual Member having been represented at at least two ordinary meetings of the group has the right to cast a vote by proxy (see article 26). Thus an Individual Member may not cast a vote by proxy during a meeting at which it is not represented unless it had already been represented at two or more qualifying meetings of the group.

top

35.4 Removal from and reinstatement to voting list

An Individual Member which is not represented at three consecutive meetings of the TSG or WG shall be removed from the voting list.

The right to vote is reinstated at the second meeting which a delegate of the Individual Member attends without missing the number of consecutive meetings mentioned in the previous paragraph (but see article 35.3 for eligibility to cast a proxy vote).

EXAMPLE 1: If Individual Member Z is represented at meeting K and K+3 (and is thus eligible to vote) but is not represented at meetings K+4, K+5 and K+6, it is removed from the voting list.

EXAMPLE 2: If Individual Member X, not previously having been represented at a meeting of the group, is represented at meetings N and N+3, it may cast a vote at meeting N+3.

NOTE: Individual Member X might choose to cast a vote by proxy at meeting N+3, even though its delegate is physically present. This is sometimes useful for coordinating company positions where one large company has several Individual Memberships, possibly via several different Organizational Partners.

EXAMPLE 3: If Individual Member Y, not previously having been represented at a meeting of the group, is represented at meeting N only, it may not cast a vote by proxy at meeting N+2.

top

35.5 Meetings other than ordinary meetings

Any group that wants to call an electronic meeting (audio, video, document distribution by posting or e-mail, etc) may do so, although this works best with smaller groups. Therefore, all electronic meetings are allowed but only ordinary meetings (see annex F) count towards attendance. However, if a meeting is designated as face-to-face, provision of bridge and speakerphone capabilities for those requesting it would be at the discretion of the host. Those participating by speakerphone are not to be counted toward quorum or attendance, and are not allowed to vote.

For the determination of the quorum, see annex H.

top

Article 36: TSG Sub Working Groups

A Working Group may establish a Sub Working Group (SWG) with defined Terms of Reference. The Working Group shall appoint a SWG Chair. The SWG shall work by consensus. The meeting notice requirements for a SWG meeting are the same as for TSGs and WGs.

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SECTION G: WORK PROGRAMME AND TECHNICAL CO-ORDINATION

Article 37: Work Programme

The 3GPP Work Programme shall consist of Work Items defined by the TSGs.

top

Article 38: Work Items

A 3GPP Work Item is a specification task defined in terms of the following principal parameters:

- title;
- intended output (i.e. Technical Specifications or Technical Reports);
- impact on other Technical Specifications and Technical Reports;
- technical scope, including the field of application of the intended output;
- impact on other 3GPP Work Items;
- the schedule of tasks to be performed;
- the identities of the supporting Individual Members;
- the identity of the Work Item Rapporteurs.

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Article 39: Work Item creation

Each proposed new Work Item shall be supported by at least four Individual Members, and their names shall be recorded in the Work Item definition prepared for the TSG approval. One or more persons shall be named as Rapporteur for the proposed Work Item, and the Rapporteur shall act as the prime contact point on technical matters and for information on progress throughout the drafting phases. The supporting Individual Members are expected to contribute to and progress the new work item throughout the drafting phases.

In addition to the above, TSGs shall approve new Work Items, giving all essential parameters. The proposal shall be entered into the 3GPP work programme, clearly marked as a new entry, for which a unique reference identity shall be allocated.

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Article 40: Work Item adoption by PCG

The 3GPP work programme shall be made available to all Individual Members. A new Work Item shall remain flagged as "new" until the end of the month following the month during which the 3GPP work item was entered into the 3GPP work programme. A new Work Item shall be adopted by the PCG unless a substantial objection is received from an Individual Member or Partner during this period. At the end of the period, the "new" flag shall be removed (even if there is an objection) and it is the responsibility of any objecting Individual Member or Partner to discuss their objections with the TSG Chair. If it is not possible to resolve the objection, it is the responsibility of the Individual Member or Partner to raise the issue with the PCG.

The TSGs shall ensure that the 3GPP Work Item details are maintained at regular intervals.

top

Article 41: Work Item stopping

Prior to completion of the intended 3GPP output, the responsible TSG may conclude that a Work Item is no longer required. Any Work Item shall automatically be considered by a TSG for stopping, if no progress has been achieved in a given period of time, typically six months, e.g. due to a lack of contribution. In such cases, the Work Item shall be flagged as "stopped" in the Work Programme. The proposal to stop a Work Item shall be fully justified.

The Work Programme shall be updated accordingly, and shall show the Work Item as "stopped" until the end of the month following the month during which the Work Item was initially flagged.

The Work Item will be stopped by the PCG unless substantial objection is received from an Individual Member during this period. It is the responsibility of any objecting Individual Member to discuss their objections with the TSG Chair. If it is not possible to resolve the objection, it is the responsibility of the Individual Member to raise the issue with the PCG.

top

Article 42: Technical co-ordination

The PCG shall be responsible for determining the overall time frame and for managing the overall work progress. The System Aspects TSG shall have a particular responsibility for the technical co-ordination of work being undertaken within 3GPP, and for overall system architecture and system integrity. Problems encountered in performing this technical co-ordination role shall be reported immediately to the PCG.

top

SECTION H: DELIVERABLES

Article 43: Deliverable types

3GPP shall prepare, approve and maintain documents known as Technical Specifications and Technical Reports. Such documents shall be drawn up by the TSGs and shall, following approval at that level, be submitted to the participating Organizational Partners to be submitted to their respective standardization processes.

top

Article 44: Approval process

Approval of Technical Specifications and Technical reports by a TSG shall normally be by consensus.

Where consensus cannot be achieved in the TSG a vote may be taken.

When Technical Specifications and Technical Reports become sufficiently stable, they shall be put under change control of the relevant TSG. The further elaboration of these Technical Specifications and Technical Reports shall be achieved by change requests to be approved by the TSG.

top

Article 45: Drafting rules

The Technical Specifications and Technical Reports drafted by the TSGs shall follow the 3GPP drafting rules, using document processing facilities, format, languages and notations agreed by the Organizational Partners, and on a medium suited for electronic document handling and publishing.

top

Article 46: Copyright and ownership

The Organizational Partners will have joint ownership (including copyright) of the Technical Specifications and Technical Reports produced by 3GPP.

top

Article 47: Conversion by Organizational Partners

Organizational Partners shall use their best endeavours to convert the Technical Specifications and Technical Reports approved by the Partnership Project into national/regional deliverables in a timely manner through their normal processes.

The Organizational Partners are urged not to change the technical parts of the Technical Specifications and Technical Reports; they may add non-technical parts required by their own deliverable schemes and they may add descriptions of options selected.

Organizational Partners should ensure that all unresolved comments raised during their public enquiry and approval phases are delivered to the appropriate TSG.

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SECTION I: REPORTING

Article 48: Chair’s reporting obligations

A report shall be prepared by the Chair following all PCG and TSG meetings.

top

Article 49: Changes to structure and officials

The Chair of each TSG shall inform the PCG of all organizational changes concerning Working Groups and their officials. An up to date record of the 3GPP structure shall be maintained.

top

Article 50: Calendar of meetings

The PCG and TSGs shall maintain an up to date calendar of the dates and venues for future meetings.

top

SECTION J: EXTERNAL RELATIONS

Article 51: Relationship with the ITU

3GPP results should be submitted to the ITU as appropriate.

For working groups, the following handling of communications toward ITU shall apply:

1 Working groups shall send ITU submissions which are destined to become part of ITU deliverables to their parent TSG for review.

2 Working group communications towards the ITU which are NOT destined to become part of an ITU deliverable must be reviewed by the TSG Chair and the appropriate ITU sector convener (if one exists for the given ITU sector). The working group's TSG Chair and ITU sector convener will determine if such a communication should be sent to the parent TSG for review. If for some reason either the TSG Chair or ITU sector convener is not available, then it is sufficient for the remaining person to review the document and determine if it should be escalated to the TSG or not.

3 If the working group communication does not require TSG review, then it shall be conveyed to the ITU from the WG using one of the mechanisms described below.

For TSGs, the following handling of communications toward ITU shall apply:

1 TSGs shall send ITU submissions which are destined to become part of ITU deliverables to the PCG for review.

2 TSGs communications towards the ITU which are deemed sensitive by the TSG shall be sent to the PCG for review.

3 If the TSG does not judge the communication as sensitive, then it shall be conveyed to the ITU from the WG using one of the mechanisms described below.

To convey a communications towards the ITU, one of the following mechanisms shall be used based upon determination of the sending body (a body may determine a default mechanism).

a) The communication shall be sent from the OPs as a deliverable from their organizations (applicable to PCG reviewed communications only)

b) The communication shall be made by Individual Members who are also members of the ITU. In such a circumstance, the appropriate ITU sector convener will coordinate and handle the administrative matters for the submission. 3GPP Technical Specifications and Technical Reports may be taken as the technical content of such contributions (applicable to PCG reviewed communications or TSG reviewed communications).

c) The communication shall be sent directly from the 3GPP liaison coordinator to the appropriate ITU receiver in the ITU (applicable to TSG reviewed communications or WG reviewed communications).

Representatives of ITU-D, ITU-R and ITU-T are invited to participate in the Project Coordination Group for the efficient coordination and exchange of information.

top

Article 52: Relations with other groups

TSGs and WGs are encouraged to liaise directly with the relevant technical bodies within the 3GPP and Partners as appropriate.

A liaison statement shall clearly communicate what is expected from the receiver, i.e., which parts are for information, which questions are expected to be clarified and by whom (especially if there are multiple receivers), and also when an answer is needed, e.g., when is the next meeting of the group sending the liaison statement.

A TSG or any subtending Working Group may send individual liaisons to any external organization (other than ITU) without PCG approval, except if the statement is considered sensitive by the TSG Chair, in which case PCG clearance is needed.

It is not necessary to have all external liaisons copied to the PCG and/or TSG SA. The liaison originating TSG should decide, at its own discretion, which should be copied. External liaisons that may have management implications such as schedules, organization, process, procedures, and policy shall be copied to the PCG, or approved by the PCG if sensitive.

Relations with the ITU are described in article 51.

top

SECTION K: MISCELLANEOUS

Article 53: Resources

The resources for the operation of 3GPP shall be managed by the Organizational Partners. The resources are allocated to the TSGs by the PCG.

top

Article 54: Support Team

The Partners shall provide logistical support to, and assist in the operation of, 3GPP. The support shall be in the form of a Support Team which shall operate under the overall management of the PCG and the day to day management of TSGs.

top

Article 55: Intellectual Property Rights (IPR) Policy

Individual Members shall be bound by the IPR Policy of their respective Organizational Partner.

Individual Members should declare at the earliest opportunity, any IPRs which they believe to be essential, or potentially essential, to any work ongoing within 3GPP. Declarations should be made by Individual Members to their respective Organizational Partners.

Organizational Partners should encourage their respective members to grant licences on fair, reasonable terms and conditions and on a non-discriminatory basis.

top

Article 56: Working language

The working language for 3GPP shall be English.

Meetings of the PCG and TSGs shall be conducted in English.

3GPP Technical Specifications and Technical Reports shall be prepared in English (as defined by the Shorter Oxford English Dictionary).

top

Article 57: Duration

3GPP shall be task oriented and on completion of the tasks the future of 3GPP shall be re-considered. The continuation of 3GPP shall therefore be confirmed by the Organizational Partners on an annual basis.

top

Article 58: Review of activities

An evaluation of the activities of 3GPP should be made by the Organizational Partners at regular intervals.

top

Article 59: Dissolution, winding up

In the event of a voluntary dissolution of 3GPP, the Partners shall determine the terms of liquidation by consensus. All issues shall be documented and distributed at least 30 days prior to decisions being made.

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Article 59A: Exhaustion of appeal procedures

In connection with any claim or dispute of an Individual Member arising from or relating to any activity of any 3GPP meeting or action, including in connection with a TSG or WG meeting, such Individual Member shall, prior to commencing any such legal proceeding against 3GPP, its leadership, support staff, or one or more Organizational Partners in a court, an arbitral panel or other adjudicatory body, exhaust all appeal procedures provided in the 3GPP Working Procedures. Exhaustion of appeal procedures shall be diligently expedited by both the appealing party and the appeal body.

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Article 60: Amendments to 3GPP Working Procedures

These Partnership Project Working Procedures may only be amended by decision taken by the PCG.

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Annex A: Definitions

Consensus:	General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interest and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments. (Note: consensus need not imply unanimity).
Conversion:	The transformation of a 3GPP output document into an Organizational Partners deliverable following the Organizational Partners' recognized processes.
Delegate:	An individual taking part in a TSG/WG meeting physically or by electronic means.
Drafting Rules:	A document approved by the Organizational Partners providing rules for the drafting of 3GPP Technical Specifications and Technical Reports.
Election:	The voting process used to identify an individual from a number of individuals.
Guest:	An entity fulfilling the criteria to become a future Individual Member, which has been granted temporary participation rights in the 3GPP
Individual Member:	A member of an Organizational Partner having participation rights within that Organizational Partner and which has registered to take part in 3GPP.
ITU Representative	Representatives of ITU-D, ITU-R and ITU-T invited to participate in the Project Coordination Group for the efficient coordination and exchange of information.
Leadership:	A Chair, Vice-Chair, or Convenor of an OP/PCG/TSG/WG/SWG/Ad-Hoc or any other 3GPP meeting.
Market Representation Partner:	A Partner invited by the Organizational Partners to participate in 3GPP to offer advice and to bring into 3GPP a consensus view of market requirements.
Observer:	An Organization fulfilling the criteria to become a future Partner which has been granted temporary participation rights in 3GPP.
Organizational Partner:	A recognized Standards Organization which has been accepted as a Partner in 3GPP.
Partner:	An Organizational Partner or a Market Representation Partner of 3GPP.
Partnership Project Agreement:	The document signed by 3GPP Partners defining their rights and obligations.
Partnership Project Description:	A document which describes the overall structure and operation of 3GPP.
Represent:	Attend on behalf of. A person who attends a meeting on behalf of an Individual Member represents that Individual Member. The person is not necessarily employed by that Individual Member, but may be, for example, employed by a subsidiary company in the same group as the represented Individual Member; or the person may be an independent consultant under contract to the Individual Member. "Representation" sometimes influences the eligibility to vote – see article 35 and annexes A and F.
Sub Working Group	A subordinate body of a Working Group.
Support Team:	A number of persons dedicated to support 3GPP.
Technical Report:	A 3GPP output document containing mainly informative elements approved by a Technical Specification Group.
Technical Specification:	A 3GPP output document containing normative provisions approved by a Technical Specification Group.
Voting Member	An Individual Member who has voting rights within a TSG/WG.
Work Item:	The documented record of a specific technical activity of 3GPP.
Work Programme:	The documented record of the all technical activities of 3GPP.
Working Group:	A subordinate body of a Technical Specification Group.

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Annex B: Abbreviations

3GPP	Third Generation Partnership Project
ARIB	Association of Radio Industries and Businesses
ATIS	Alliance for Telecommunications Industry Solutions (successor to T1)
CCSA	China Communications and Standards Association (successor to CWTS)
CDMA	Code Division Multiple Access
CWTS	China Wireless Telecommunications Standards Group (superseded by CCSA)
ETSI	European Telecommunications Standards Institute
FDD	Frequency Division Duplex
GSM	Global System for Mobile Communication
IM	Individual Member
IMT-2000	International Mobile Telecommunication
ITU	International Telecommunication Union
MRP	Market Representation Partner
PCG	Project Co-ordination Group
SWG	Sub Working Group
T1	Standards Committee T1 (superseded by ATIS)
TDD	Time Division Duplex
TSDSI	Telecommunications Standards Development Society, India
TSG	Technical Specification Group
TTA	Telecommunications Technology Association
TTC	Telecommunication Technology Committee
UIM	User Identity Module
UTRA	Universal Terrestrial Radio Access
UTRAN	Universal Terrestrial Radio Access Network
WG	Working Group

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Annex C: Individual member application form

APPLICATION FORM
for INDIVIDUAL MEMBERSHIP
of the THIRD GENERATION PARTNERSHIP PROJECT
Please complete this form and return it to your Organizational Partner

COMPANY NAME .....

Please indicate below which ORGANIZATIONAL PARTNER you are a member of

ARIB	
CCSA	
ETSI	
ATIS	
TSDSI	
TTA	
TTC	

Please indicate below which Technical Specification Groups you wish to participate in:

Radio Access Network	
Core Network and Terminals	
Service and System Aspects	
GSM EDGE Radio Access Network (GERAN)	

Upon your approval as an Individual Member of the Third Generation Partnership Project you agree that you will be bound by the Working Procedures of the Third Generation Partnership Project then in effect and as they may be amended from time to time.

Signed by (Authorized Representative) (See Note 1)	
Print name	
Position	
Date	
Telephone	
Fax	
Email	
Company Website URL	

Contact person's family name (See Note 2)	
Contact person's given name	
Job title	
Mailing address	
Telephone	
Fax	

Email	

Note 1: Is either the official contact person or voting contact of a company.

Note 2: People attending meetings and who can also have signing authority.

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Annex D: (Void)

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Annex E: Guidance for MRP applicants

E.1 Introduction

The conditions for the acceptance of Market Representation Partners (MRPs) in 3GPP are given in article 7 of these Working Procedures. This annex provides additional guidance to MRP Applicants.

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E.2 Guidance

During the application process, the Organizational Partners will need to be assured that an Applicant:

(a) Has a field of interest directly or indirectly related to the work being undertaken by 3GPP;

(b) Has attained a demonstrable level of recognition within this field of interest;

(c) Has an understanding of the market requirements relevant to 3GPP;

(d) Is willing to actively contribute to the work of 3GPP and has sufficient resources for this purpose;

(e) Fully supports the goals and objectives of 3GPP and does not take part in activities that conflict with these goals and objectives.

In processing an application, the Organizational Partners will peruse openly available documentation published by an Applicant, including material posted on its Website, in order to confirm that the points listed above have been satisfied.

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Annex F: Guidance on meeting organization

F.1 Meeting classification

TSG and WG Meetings are classified either:

- ordinary; or
- ad hoc.

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F.2 Ordinary meetings

Ordinary meetings are ones where the regular business of the TSG or WG is conducted. Such meetings are normally chaired by the Group's Chair or, if unavailable, a Vice Chair. Ordinary meeting should be announced at least six months prior to the opening day of the meeting.

TSG and WG ordinary meetings shall follow an incrementing number sequence. If an additional ordinary meeting is required between two ordinary meetings, the sequence may be preserved, even though this means renumbering subsequent meetings, or the additional meeting may be numbered using the 'bis' suffix as a numbering scheme.

Attendance at an ordinary meeting counts towards an Individual Member's eligibility to cast a vote in the Group (see articles 26 and 27). The Support Team shall record the participation in an ordinary meeting (each person and organization represented) and the attendance list shall be included in the meeting report.

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F.3 Ad hoc meetings

An ad hoc meeting of a WG or a TSG is one called to address one or more particular topics. The ad hoc meeting shall be called by decision of the WG (or its parent TSG) or TSG concerned; the decision to hold any subsequent ad hoc meetings on the same topic may be made by the ad hoc meeting participants themselves without reference to the parent WG or TSG, although the parent WG or TSG shall review any ad hoc activity at every Ordinary meeting and determine to either continue or to close the ad hoc activity, even if the previous ad hoc meeting suggested a further meeting. The scope of each subsequent ad hoc meeting shall be indicated by the Chair at least 21 days before the meeting. The ad hoc meeting shall not expand or change the scope originally determined by the parent group. An ad hoc meeting is allowed to make decisions only within its pre-defined remit, and any such decisions shall be ratified by the parent WG or TSG unless, in the case of a WG, a decision was previously explicitly delegated by the WG to the ad hoc meeting.

An ad hoc meeting may be chaired as described for an ordinary meeting above, or, with the agreement of the WG or TSG concerned, by a Work Item rapporteur, or other appropriate person. Although open to all 3GPP Individual Members, ad hoc meetings may attract only a subset of Individual Member representatives who would normally participate in ordinary meetings.

Ad hoc meetings shall not be considered when calculating voting rights. That is, attendance at (or absence from) an ad hoc meeting shall not influence voting rights, which are determined solely by attendance at "ordinary" meetings.

No voting shall occur at ad hoc meetings.

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F.4 Attendance register

F.4.1 Face to face meetings

A delegate is deemed to have attended a given meeting if the individual confirms their participation by signing the attendance list made available by the group's secretary during the meeting. If a delegate does not sign the attendance sheet during the meeting, the secretary shall assume that the individual did not attend.

A delegate, having registered and begun to participate in a meeting, is not allowed to change their represented organization during the course of that meeting. An individual delegate is not allowed to simultaneously represent two or more Individual Members at a meeting.

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F.4.2 Electronic meetings

Electronic meetings such as audio / video conferences, email exchanges considered as meetings, etc, are encouraged where appropriate. For such events, the Secretary will establish the attendance list on the basis of those actually participating in the meeting (those dialling in to the conference bridge, those issuing and responding to emails, etc.) Nevertheless, advance registration is strongly encouraged.

Fully electronic meetings are to be considered as "ad hoc" as defined above.

Participation by Individual Member in fully electronic meetings, or electronic participation in a face to face meeting (eg by phoning in) is not considered for the accrual or loss of voting rights.

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Annex G: Working agreements

"Working agreements" are tentative decisions reached by 3GPP groups in order to make progress on matters where consensus (as defined in annex A) cannot be reached. It is intended to be used in situations where there is a clear majority in favour of one approach, but a small minority has sustained opposition to that approach.

The working agreement process has the following steps:

- Consensus cannot be reached on an issue. A substantial majority of individual members prefer a given approach, but there is sustained opposition by a small minority of individual members, preventing consensus.
- The Chair declares a working agreement. The working agreement is documented in the meeting report
- The approach agreed to by the majority and documented in the working agreement can continue unimpeded.
- The working agreement is entered into the 3GPP working agreements page on the 3GPP web site. The window for challenging the working agreement is now open.
- Working agreements may be challenged, resulting in a formal vote. This potential vote would be held at the next meeting of the WG or parent TSG (whichever comes first). If the next meeting is less than 14 days after the establishment of the working agreement, then that meeting is skipped in determining the next meeting. The meeting for potential voting is documented on the 3GPP working agreements page of the 3GPP web site (http://www.3gpp.org/TSG-Working-Agreements).
- The challenge cut-off date is established. This is 7 days before the start of the meeting for potential voting. The cut-off date is documented on the 3GPP working agreements page of the 3GPP web site.
- Organizations wishing to challenge the working agreement may do so until the challenge window closes. A challenge may be made by informing the Chair of the group which will do the voting. Any received challenge is documented on 3GPP working agreements page of the 3GPP web site.
- The group which will be voting is informed of the intention to have a working agreement challenge vote and the specific voting question.
- If no challenge is received by the challenge cut-off date, then the working agreement is confirmed. The confirmation of the working agreement is documented on the 3GPP working agreements page of the 3GPP web site. The issue is closed.
- If a challenge is received, then a formal vote on the working agreement will occur at the designated meeting. If the draft agenda for the designated meeting has already been issued, then it will be updated to include the potential for voting on the working agreement. Voting is as described in articles 25, 26 and 32 of the working procedures with the exception that the requirement for quorum is waived.
- If the challenge fails (at least 71% in favour of the working agreement), then the working agreement is confirmed. The confirmation of the working agreement is documented on the 3GPP working agreements page of the 3GPP web site. The issue is closed.
- If the challenge succeeds (less than 71% in favour of the working agreement), then the working agreement fails. All changes which were made based on the working agreement shall be reversed and the group must continue to search for consensus. The overturning of the working agreement is documented on the 3GPP working agreements page of the 3GPP web site.
- Organizations may withdraw a challenge at any time in the process. If the last challenge is withdrawn after the challenge cut-off, then the working agreement is confirmed. The confirmation of the working agreement is documented on the 3GPP working agreements page of the 3GPP web site. The issue is closed.

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Annex H: Calculation of quorum in TSGs and WGs

Where calculation of a quorum is required in the context of a vote conducted in a TSG or a WG, the quorum shall be deemed to have been met if:

$(B - P) / V >= Q$

Where:

B is the number of ballot papers issued;

P is the number of proxy votes exercised (i.e. the number of ballot papers issued to delegates bearing authorization to cast votes by proxy);

V is the number of Individual Members having the right to vote at the meeting (including those with only the right to vote “in person” and not by proxy);

Q is the required quorum value given in article 26.

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Annex I: Special procedures for exceptional situations restricting travel

3GPP working procedures are designed around the concept of periodic face to face meetings. This is not always possible. This annex implements modifications to the working procedures intended to allow 3GPP to function in the absence of face to face meetings. The PCG has the responsibility of activating and deactivating this annex.

The following changes in the working procedures are in effect when this annex is activated:

Article 14: PCG tasks

The following item shall be added to the list of PCG tasks:

- *maintenance of the voting and voting rights process integrity, to include disciplinary action if required.*

Article 22: TSG and WG election of Chair and Vice Chairs

The following paragraph is removed from section 22.2

If a WG does not meet physically with enough frequency to maintain an up to date voting list, the working group may elect to escalate the voting for officers to the parent TSG.

Article 26: TSG and WG voting during a meeting

The following additions to article 26 are in effect:

If voting occurs in the context of an Electronic Meeting, then:

- *Proxies are not allowed.*
- *Quorum does not apply.*
- *The voting period shall be a minimum of 18 consecutive hours excluding the period 12:00 UTC Friday to 11:59 UTC Monday which excludes Saturday and Sunday in every time zone. The use of 18:00 UTC to 12:00 UTC the next day is recommended for the voting period.*
- *The voting period shall commence no earlier than the start of the Electronic meeting and complete before the closure of the meeting. Voting for elections may exceptionally extend past the scheduled end of the meeting if additional rounds are required to complete the election of all open positions. Such elections are considered to be part of the meeting in which the elections started.*
- *The starting and closing times of the vote shall be clearly announced and disseminated to all on the principal TSG or WG membership mail exploder lists.*
- *The list of Voting Members (IMs that are eligible to vote) is as defined in article 35. Delegates vote on behalf of the IM under which they have registered, and only delegates checked in to the meeting may vote.*
- *If, in accordance with Article 25, the TSG or WG decides that a secret ballot is required, voting shall preserve the secrecy of the votes cast.*
- *A secure voting tool provided by the MCC shall be used for elections, and is also encouraged for other matters where voting is required.*

Article 28: TSG or WG voting for the election of TSG or WG Chair and Vice Chair

The following new paragraph is added to the end of article 28:

If an election is held during an electronic meeting, the voting shall use the voting procedures described in Article 26 as amended by this Annex.

Article 30: TSG and WG meetings

The following new paragraph is added after the 2nd paragraph of this article:

Electronic meetings are encouraged where appropriate.

Article 30A: TSG and WG participation

The text in article 30A shall be replaced with:

IMs wishing to progress work on topics in 3GPP are expected to participate in both face to face meetings and electronic meetings.

If a 3GPP IM is materially interested in a specific topic but is unable to participate in a meeting by sending a delegate, the IM is urged to engage the support of other IMs whose delegates will be present at the meeting to present its views. If this is not possible for any reason, the IM may advise the Chair of the situation and may provide documents supporting their position. The Chair may facilitate the introduction of these documents during the meeting and the record of the meeting can include the discussion and outcome. The option to engage the Chair is intended for exceptional situations. The Chair has the right to decline the request.

Article 32: TSG and WG meeting agenda

The following paragraph is added:

The draft agenda shall indicate the start and end dates and times of the meeting. The draft agenda shall indicate if the meeting counts toward maintenance of voting rights.

Article 35: TSG and WG Voting Membership List

35.3 Established TSGs and WGs

The text in section 35.3 shall be replaced with:

To qualify for the voting list it is necessary for at least one delegate of an Individual Member to fulfill the voting rights establishment provisions of article 35.4 for the group concerned, without being removed according to the provisions of article 35.4.

An individual member having attained voting rights according to clause 35.4 has the right to cast a vote by proxy (see article 26). Thus, an Individual Member may not cast a vote by proxy during a meeting at which it is not represented unless it had already attained voting rights as described in clause 35.4.

35.4 Removal from and instatement to voting list

The word *reinstatement* in the title of section 35.4 shall be replaced by *instatement*

The text in section 35.4 shall be replaced with:

An Individual Member shall be removed from the voting list when either of the following happens:

1. *The Individual Member is not represented at three consecutive face to face ordinary meetings of the group (TSG or WG),*
2. *The Individual Member is not represented in two consecutive ordinary meetings of the group (TSG or WG) of which at least one is electronic*

The right to vote shall be instated or reinstated for an Individual Member at either of the following events:

1. *the second face to face ordinary meeting which a delegate of the Individual Member attends without missing the number of consecutive face to face ordinary meetings mentioned in the previous paragraph,*
2. *the third consecutive ordinary meeting which a delegate of the Individual Member attends*

Note: See article 35.3 for eligibility to cast a proxy vote.

EXAMPLE 1: If Individual Member Z is represented at face to face ordinary meeting K and K+3 (and is thus eligible to vote) but is not represented at face to face ordinary meetings K+4, K+5 and K+6, it is removed from the voting list.

EXAMPLE 2: If Individual Member X, not previously having been represented at an face to face ordinary meeting of the group, is represented at face to face ordinary meetings N and N+3, it may cast a vote at face to face ordinary meeting N+3.

NOTE: Individual Member X might choose to cast a vote by proxy at face to face ordinary meeting N+3, even though its delegate is physically present. This is sometimes useful for coordinating company positions where one large company has several Individual Memberships, possibly via several different Organizational Partners.

EXAMPLE 3: If Individual Member Y, not previously having been represented at a meeting of the group, is represented at ordinary meeting N only, it may not cast a vote by proxy at ordinary meeting N+2.

EXAMPLE 4: If Individual Member A is represented at electronic ordinary meetings N, N+1, and N+2 (and is thus eligible to vote) but is not represented at electronic ordinary meetings N+3 and N+4, it is removed from the voting list.

EXAMPLE 5: If Individual Member B, not previously having been represented at an ordinary meetings of the group, is represented at electronic ordinary meetings N, N+1, and N+2, it may cast a vote at electronic ordinary meeting N+2.

35.5 (Void)

The contents of this section shall be struck and the heading replaced with VOID.

The following subclause is added to Article 35:

35.6 OP Voting Rights Hardship Exemption

For an IM belonging to an OP that has a voting rights hardship exemption for a given meeting, then missing the meeting is not counted in the voting rights algorithm. (In other words, for that IM, it is treated as though the meeting did not occur). If an IM covered by a voting rights hardship exemption for voting rights does attend the meeting, then it is counted as normal attendance.

If an IM covered by voting rights hardship exemption misses a meeting, there will be a permanent record (e.g., in the relevant meeting report) to note the list of IMs who have the voting rights hardship exemption for that meeting, and the voting rights list will also indicate the voting rights hardship exemption for the relevant meeting.

Voting rights hardship exemptions are granted on a per OP, per meeting basis.

Annex A: Definitions

The following 4 definitions are added:

Ad hoc Meeting	*A meeting called to address one or more particular topics that is not an ordinary meeting (see F.3)*
Electronic meeting:	*A electronic meeting is one where all the participants connect to the meeting using electronic means such as audio/video conference, email, etc.*
Face to face meeting:	*A face to face meeting, also referred to as a physical meeting, is one held at a designated physical location where participants are invited to attend in person.*
Ordinary Meeting	*A meeting where the ordinary business of a group is conducted (see F.2).*

Annex F: Guidance on meeting organization

The title of Annex F shall be changed to Guidance on TSG and WG meeting Organization

F.2 Ordinary meetings

The contents of clause F.2 shall be replaced with the following:

Ordinary meetings are ones where the regular business of the TSG or WG is conducted. Such meetings are normally chaired by the Group's Chair or, if unavailable, a Vice Chair. Ordinary meetings should be announced at least six months prior to the opening day of the meeting. An ordinary meeting may be held as a face to face meeting or as an electronic meeting.

TSG and WG ordinary meetings shall follow an incrementing number sequence. If an additional ordinary meeting is required between two ordinary meetings, the sequence may be preserved, even though this means renumbering subsequent meetings, or the additional meeting may be numbered using the 'bis' suffix as a numbering scheme. Ordinary meetings that are held electronically shall be designated with an 'e' suffix.

Attendance at an ordinary meeting counts towards an Individual Member's eligibility to cast a vote in the Group (see articles 26 and 27). The Support Team shall record the participation in an ordinary meeting (each person and organization represented) and the attendance list shall be included in the meeting report.

If a meeting is designated as face to face, provisions to support remote participation (e.g. by using additional audio/video capabilities) would be at the discretion of the host and leadership. In a meeting designated as face to face, those participating remotely are not to be counted toward quorum or attendance, and are not allowed to vote.

Following each ordinary meeting, the Support Team shall publish a list of IMs that have gained or lost voting rights at that meeting.

F.3 Ad hoc meetings

The contents of clause F.3 shall be replaced with the following:

An ad hoc meeting of a WG or a TSG is one called to address one or more particular topics. An ad hoc meeting may be held as a face to face or as an electronic meeting. The ad hoc meeting shall be called by decision of the WG (or its parent TSG) or TSG concerned; the decision to hold any subsequent ad hoc meetings on the same topic may be made by the ad hoc meeting participants themselves without reference to the parent WG or TSG, although the parent WG or TSG shall review any ad hoc activity at every Ordinary meeting and determine to either continue or to close the ad hoc activity, even if the previous ad hoc meeting suggested a further meeting. The scope of each subsequent ad hoc meeting shall be indicated by the Chair at least 21 days before the meeting. The ad hoc meeting shall not expand or change the scope originally determined by the parent group. An ad hoc meeting is allowed to make decisions only within its pre-defined remit, and any such decisions shall be ratified by the parent WG or TSG unless, in the case of a WG, a decision was previously explicitly delegated by the WG to the ad hoc meeting.

An ad hoc meeting may be chaired as described for an ordinary meeting above, or, with the agreement of the WG or TSG concerned, by a Work Item rapporteur, or other appropriate person. Although open to all 3GPP Individual Members, ad hoc meetings may attract only a subset of Individual Member representatives who would normally participate in ordinary meetings.

Ad hoc meetings shall not be considered when calculating voting rights. That is, attendance at (or absence from) an ad hoc meeting shall not influence voting rights, which are determined solely by attendance at "ordinary" meetings.

No voting shall occur at ad hoc meetings.

F.4 Attendance Register

The contents of clause F.4 (and subclauses) shall be replaced with the following:

A delegate is deemed to have attended a given meeting if the individual confirms their participation by checking in. If a delegate does not check in during the meeting, the secretary shall assume that the individual did not attend. Checking in must be performed between the start and end of the meeting. In addition, the check in process shall clearly inform the delegate that 'Checking in carries the responsibility for participating in relevant parts of the meeting'.

A delegate, having registered and checked in to a meeting, is not allowed to change their represented organization during the course of that meeting. An individual delegate is not allowed to simultaneously represent two or more Individual Members at a meeting.

F.4.1 (void)

F.4.2 (void)

Annex G: Working agreements

The following changes to Annex G are in effect:

Challenge votes may be conducted at Electronic meetings provided they are Ordinary meetings.

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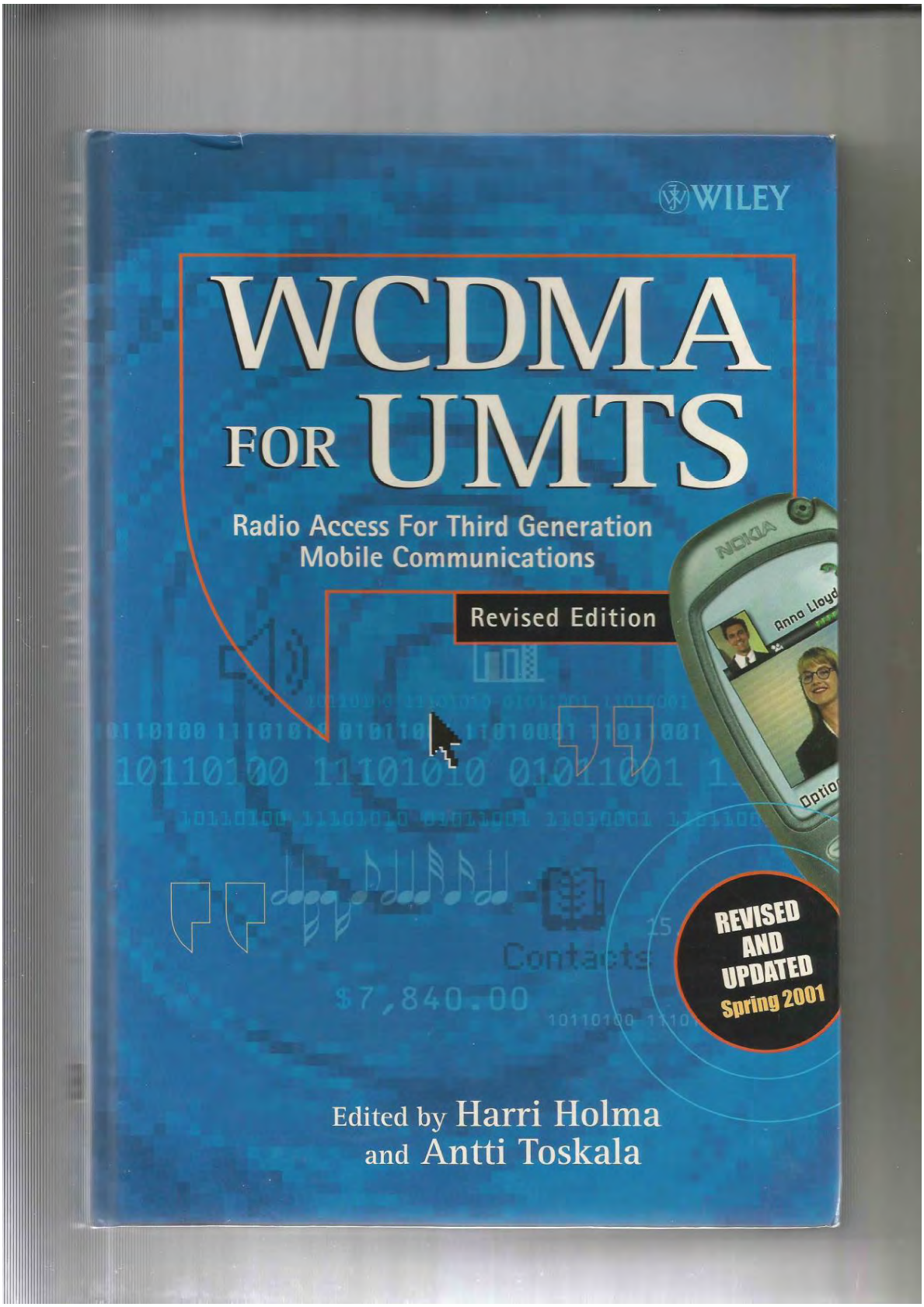
Annex J: Change history

Date	PCG #	PCG Doc.	CR	Rev	Subject/Comment
2002-04-25	6				
2005-03-01	13				Changes agreed at PCG meeting incorporated. [No formal change control system yet in place]
2006-04-24	16	PCG16_07	2		ETSI proposal: Article 10 Clarify the rights of observers and guests
			3		ETSI proposal: Article 15 To allow leeway in the number of delegates representing each OP at PCG (To reflect the decision already taken by PCG#14 on PCG participation)
			9		ETSI proposal: Article 34 To cater for current TSG structure and to reflect common practice of Tdoc numbering
			1	1	Article 3 Reflect decision on regional options (To incorporate PCG#7 decision)
			4	1	Article 22 Clarification and codification of the rights to stand for elected positions in TSGs and WGs
			8		Article 30 & annex F Inclusion of an annex giving guidance on meeting organization
2006-10-27	17	PCG17_15 r1	10		Article 35 Clarification of voting rights
2009-05-18	22	PCG22_18	11	5	Changes resulting from the OP ad hoc group on improvements report and conclusions of OP#20. Articles affected: 22 23 31 35 41 52 Annex D plus sundry spelling corrections.
		PCG22_19	12	2	Rules on eligibility to cast votes at TSG and WG level.
		PCG22_20	13		Bring statement of purpose of 3GPP up to date
		PCG22_23	14		Adding Working Agreements to working procedures
		PCG22_30 r3	15	3	Change of ITU liaison process Note: PCG meeting #22 approved contribution PCG22_30r1 but this was subsequently revised to r3 after the meeting with the apparent approval of the PCG.
					Decision PCG22/11: clause 22.1 changed wording from "in the March time frame in" to "in the first semester of".
2009-08-12					Editorial correction to implementation of CR15r3. (article 52).
2010-04-23	24	PCG24_11	16		TSG vs WG election
		PCG24_12	17		Quorum
		PCG24_13	18		Communication with ITU
		PCG24_25	19		Attendance register for meetings
2012-10-24		PCG29_17	20		Update to 3GPP Working Procedures article 22
2014-07-22	33	PCG33_10	21		Anti-trust / competition law requirements articles 12, 17, 22.1, 23, 29, 59A, annex C
2014-12-31	34	PCG34_14	22		Anti-trust recommendations v1.1.
					Addition of TSDSI to list of OPs in annexes B and C. Minor formatting and spelling corrections, consistent capitalization.

2016-11-15	35	PCG37_14	23		Article 22.1 Modification to clarify obligation on elected officials regarding antitrust/competition law training.
2019-08-22	42	(none)	24		Article 55 Correction of text to reflect actual practice. Note: Decision taken by email in response to Action PCG42/7.
2019-08-23	42	PCG42_18	25		Article 22.2 Adds text allowing WGs which meet infrequently to escalate elections of their officials to the parent TSG. Article 25 Adds text allowing WGs which meet infrequently to escalate technical votes to the parent TSG. Article 30A (new) Introduces procedures for situations where an IM is unable to send a delegate in person to a meeting but nevertheless wishes to contribute to the proceedings. Secretary's note 1: Annex B Added abbreviation 'IM', though this was not included in PCG42_18. Secretary's note 2: Corrected the CR numbers in the previous two change history entries.
2020-02-07	43	PCG43_14			Annex G: Removal of the statement that voting on working agreements was to be a standard element of every meeting agenda. Addition of a reference to article 32. Removal of the requirement for a quorum during voting on working agreements.
2020-05-15	44				Addition of "crisis annex"
2020-09-30	45	PCG45_11			Update to 3GPP Working Procedures Annex I ("crisis annex")
2021-04-29	46	PCG46_20			Decision PCG46/09: Gender Neutrality Changes Annex I Change minimum voting window from 24 to 18 hours
2022-03-07	48	PCG48_12			Voting Rights pCR to Annex I
2022-03-07	48	PCG48_13			Hardship Exemption pCR to Annex I
2022-09-01	49	-			Working Procedures P-CR for Registration

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Appendix 6



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WCDMA FOR UMTS

Radio Access For Third Generation Mobile Communications

Revised edition

Edited by
Harri Holma and Antti Toskala
Both of Nokia, Finland

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4.5.3 *cdma2000*

The cdma2000 air interface proposal to ITU is the result of work in TR45.5 on the evolution of IS-95 towards the third generation. The cdma2000 proposal is based partly on IS-95 principles with respect to synchronous network operation, common pilot channels, and so on, but it is a wideband version with three times the bandwidth of IS-95. The ITU proposal contains further bandwidth options as well as the multi-carrier option for downlink. The cdma2000 proposal has a high degree of commonality with the Global CDMA 1 ITU proposal from TTA, Korea.

The cdma2000 multi-carrier option is covered in more detail in Chapter 13, as being currently standardised by 3GPP2.

4.5.4 *TR46.1*

The WIMS W-CDMA was not based on work derived from an existing second generation technology but was a new third generation technology proposal with no direct link to any second generation standardisation. It was based on the constant processing gain principle with a high number of multicodes in use, thus showing some fundamental differences but also a level of commonality with WCDMA technology in other forums.

4.5.5 *WP-CDMA*

WP-CDMA (Wideband Packet CDMA) resulted from the convergence between W-CDMA N/A of T1P1 and WIMS W-CDMA of TR46.1 in the US. The main features of the WIMS W-CDMA proposal were merged with the principles of W-CDMA N/A. The merged proposal was submitted to the ITU-R IMT-2000 process towards the end of 1998, and to the 3GPP process at the beginning of 1999. Its the most characteristic feature, compared with the other W-CDMA-based proposals, was a common packet mode channel operation for the uplink direction, but there were also a few smaller differences.

4.6 Creation of 3GPP

As similar technologies were being standardised in several regions around the world, it became evident that achieving identical specifications to ensure equipment compatibility globally would be very difficult with work going on in parallel. Also, having to discuss similar issues in several places was naturally a waste of resources for the participating companies. Therefore initiatives were made to create a single forum for WCDMA standardisation for a common WCDMA specification.

The standardisation organisations involved in the creation of the 3rd Generation Partnership Project (3GPP) [9] were ARIB (Japan), ETSI (Europe), TTA (Korea), TTC (Japan) and T1P1 (USA) as shown in Figure 4.2. The partners agreed on joint efforts for the standardisation of UTRA, now standing for Universal Terrestrial Radio Access, as distinct from UTRA (UMTS Terrestrial Radio Access) from ETSI, also submitted to 3GPP. Companies such as manufacturers and operators are members of 3GPP through the respective standardisation organisation to which they belong.

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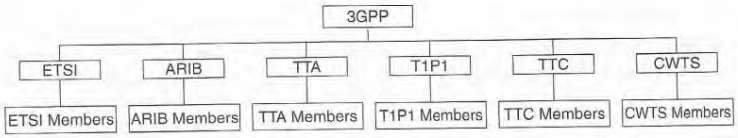


Figure 4.2. 3GPP organisational partners

Later during 1999, CWTS (the China Wireless Telecommunication Standard Group) also joined 3GPP and contributed technology from TD/SCDMA, a TDD-based CDMA third generation technology already submitted to ITU-R earlier.

3GPP also includes market representation partners: GSM Association, UMTS Forum, Global Mobile Suppliers Association, IPv6 Forum and Universal Wireless Communications Consortium (UWCC). In [9] there are up-to-date links to all participating organisations.

The work was initiated formally at the end of 1998 and the detailed technical work was started in early 1999, with the aim of having the first version of the common specification, called Release-99, ready by the end of 1999.

Within 3GPP, four different technical specification groups (TSG) were set up as follows:

- Radio Access Network TSG
- Core Network TSG
- Service and System Aspects TSG
- Terminals TSG

Within these groups the one most relevant to the WCDMA technology is the Radio Access Network TSG (RAN TSG), which has been divided into four different working groups as illustrated in Figure 4.3.

The RAN TSG will produce Release-99 of the UTRA air interface specification. The work done within the 3GPP RAN TSG working groups has been the basis of the technical description of the UTRA air interface covered in this book. Without such a global initiative, this book would have been forced to focus on a single regional specification, though with many similarities to those of other regions. Thus the references throughout this book are to the specification volumes from 3GPP.

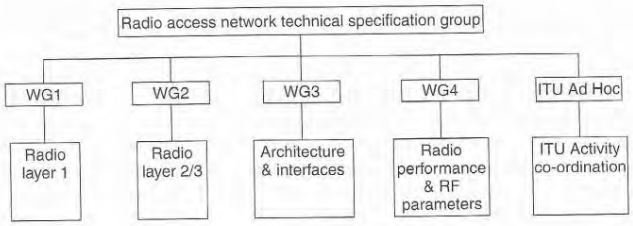


Figure 4.3. 3GPP RAN TSG working groups

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During the first half of 1999 the inputs from the various participating organisations were merged in a single standard, leaving the rest of the year to finalise the detailed parameters for the first full release, Release-99, of UTRA from 3GPP. The member organisations have undertaken individually to produce standard publications based on the 3GPP specification. Thus, for example, the Release-99 UMTS specifications from ETSI are identical to the Release-99 specifications produced by 3GPP. The latest specifications can be obtained from 3GPP [9].

During 2000, further work on GSM evolution was moved from ETSI and other forums to 3GPP, including work on GPRS and EDGE. A new TSG, TSG GERAN was set up for this purpose.

4.7 Creation of 3GPP2

Work done in TR45.5 and TTA was merged to form 3GPP2, focused on the development of cdma2000 Direct-Sequence (DS) and Multi-Carrier (MC) mode for the cdma2000 third generation component. This activity has been running in parallel with the 3GPP project, with participation from ARIB, TTC and CWTS as member organisations. Recently the main concentration has been on the MC mode work, due to decisions resulting from the global harmonisation efforts.

4.8 Harmonisation Phase

During the spring of 1999 several operators and manufacturers held series of meetings to seek further harmonisation and convergence between the CDMA-based third generation solutions, WCDMA and cdma2000. For the 3GPP framework the ETSI, ARIB, TTA and T1P1 concepts had already been merged to a single specification, while cdma2000 was still on its own in TR45.5. As a result of several meetings and telephone conferences, the manufacturers and operators agreed to adopt a harmonised global third generation CDMA standard consisting of three modes: Multi-Carrier (MC), Direct Spread (DS) and Time Division Duplex (TDD). The MC mode was based on the cdma2000 multi-carrier option, the DS mode on WCDMA (UTRA FDD), and the TDD mode on UTRA TDD. The agreement was to phase in a modular approach in which both core networks could be used with all air interface alternatives, as described in Figure 1.4 in Chapter 1.

The main technical impacts of these harmonisation activities were the change of UTRA FDD and TDD mode chip rate from 4.096 Mcps to 3.84 Mcps and the inclusion of a common pilot for UTRA FDD. The work in 3GPP2 focused on the MC mode, and the DS mode from cdma2000 was abandoned. The result is that globally there is only one Direct Spread (DS) wideband CDMA standard, WCDMA.

4.9 IMT2000 Process in ITU

In the ITU, recommendations have been developed for third generation mobile communications systems, the ITU terminology being called IMT-2000 [10], formerly FPLMTS. In the ITU-R, ITU-R TG8/1 has worked on the radio-dependent aspects, while the radio-independent aspects have been covered in ITU-T SG11.

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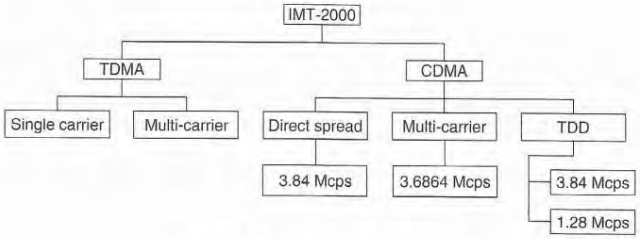


Figure 4.4. ITU-R IMT-2000 grouping

In the radio aspects, ITU-R TG8/1 received a number of different proposals during the IMT-2000 candidate submission process. In the second phase of the process, evaluation results were received from the proponent organisations as well as from the other evaluation groups that studied the technologies. During the first half of 1999 recommendation IMT.RKEY was created which describes the IMT-2000 multimode concept.

The ITU-R IMT-2000 process was finalised at the end of 1999, when the detailed specification (IMT-RSCP) was created and the radio interface specifications were approved by ITU-R [11]. The detailed implementation of IMT-2000 will continue in the regional standards bodies. The ITU-R process has been an important external motivation and timing source for IMT-2000 activities in regional standards bodies. The requirements set by ITU for an IMT-2000 technology have been reflected in the requirements in the regional standards bodies, for example in ETSI UMTS 21.01 [5], in order for the ETSI submission to fulfil the IMT-2000 requirements. The ITU-R interaction between regional standardisation bodies in the IMT-2000 process is reflected in Figure 4.5.

The ITU-R IMT-2000 grouping, with TDMA- and CDMA-based groups, is illustrated in Figure 4.4. The UTRA FDD (WCDMA) and cdma2000 are part of the CDMA interface, as CDMA Direct Spread and CDMA Multi-Carrier respectively. UWC-136 and DECT are part of the TDMA-based interface in the concept, as TDMA Single Carrier and TDMA Multi-Carrier respectively. The TDD part in CDMA consists of UTRA TDD from 3GPP and TD-SCDMA from CWTS. For the FDD part in the CDMA interface, harmonisation has been completed, and the harmonisation process is expected to continue for the CDMA TDD mode within 3GPP during 2000 and 2001.

4.10 Beyond 3GPP Release-99

Upon completion of the Release-99 specifications, work will concentrate on specifying new features as well as making the necessary corrections to Release-99. Typically such corrections arise as implementation proceeds and test systems are updated to include the latest changes in the specifications. As experience in various forums has shown, a major step forward in system capabilities with many new features requires a phasing-in period for the specifications. Fortunately, the main functions have been verified in the various test systems in operation since 1995, but only the actual implementation will reveal any errors and inconsistencies in the fine detail of the specifications.

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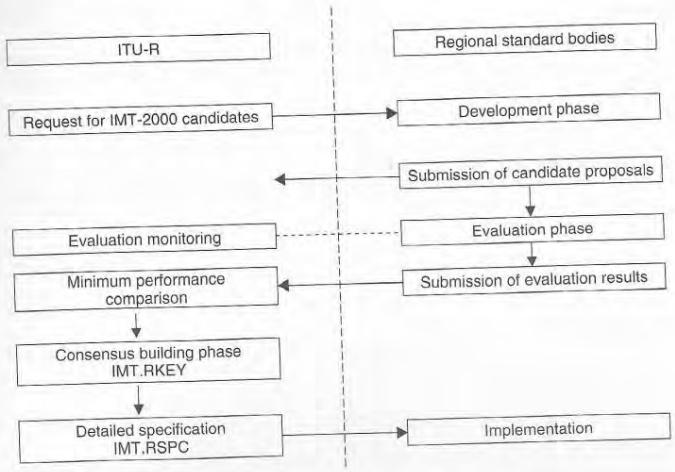


Figure 4.5. Relationship of ITU-R to the regional standards bodies

In 3GPP the next version of the specifications was originally considered as Release 2000, but since that the Release naming was adjusted so that next release is called Release 4 due to the 03/2001. Release 4 will contain only minor adjustment with respect to the Release'99. Bigger items are foreseen for inclusions in Release 5, including reaching for the data rates even up to the 10 Mbps in the downlink direction. Release 5 is due for the end of 2001. Release'99 specifications have a version number starting with 3 while Release 4 and 5 specifications have version number starting logically with 4 and 5 respectively.

During coming years, part of the process is to specify the extensions for connecting UTRA FDD to IS-41 based core networks. Work will be carried out on cdma2000 to allow connection to GSM-based core networks. This development will offer operators some degree of flexibility in selecting their third generation technology, assuming they are not aiming to launch such a service immediately, since Release-99 does not yet contain these options.

On the TDD side, further alignment is expected between the TDD mode in UTRA and the TDD mode from CWTS (China). This process is expected to continue after Release-99 is completed in 3GPP. 3GPP Release-4 is also planned to cover the lower chip rate (1.28 Mcps) TDD.

Other interesting developments are expected in the area of using IP based technology in UTRA. First step is going to be the IP based transport option in Release 4 and further releases are likely to see IP technology shaping the internal architecture of the UTRA Network (UTRAN). Also some of the protocols developed by the Internet Engineering Task Force (IETF) [12], such as robust IP header compression suitable for cellular transmission, are foreseen to be adopted as part the UTRA Rel'4 specifications.

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[10] http://www.itu.int/imt/

[11] ITU Press Release, ITU/99–22, 'IMT-2000 Radio Interface Specifications Approved in ITU Meeting in Helsinki', 5 November 1999.

[12] http://www.ietf.org

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Appendix 7

3GPP PCG#34
Sophia Antipolis, France, 28 April 2015
PCG34_27

MCC Activity Report

Source

Adrian Scrase

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- Resource Allocation
- Workload
- 3GPP Membership
- 3G Ultimate Project
- Summary and Outlook

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Departures and Arrivals

Adrian Zoicas retired from ETSI as of February 2015



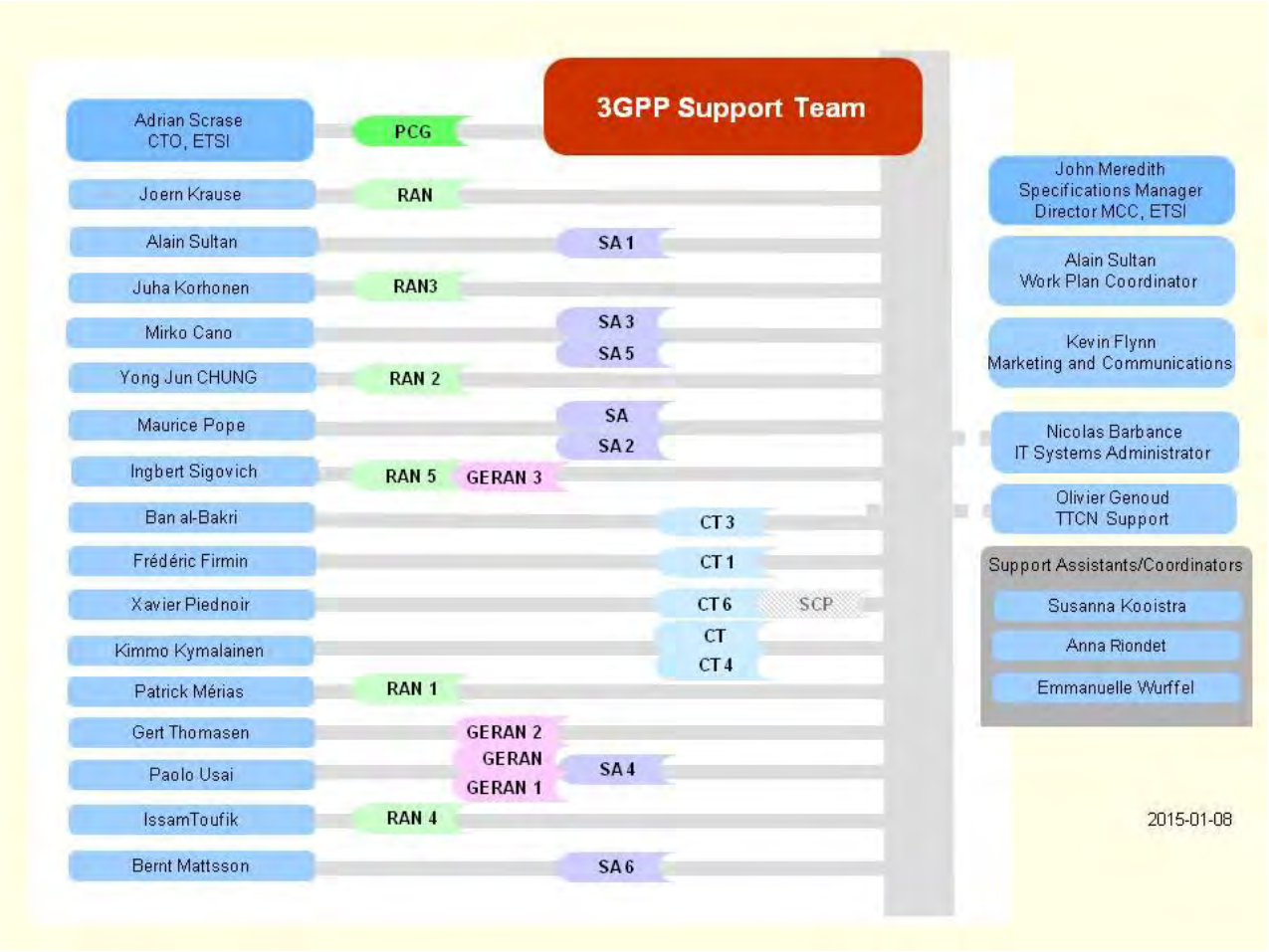
He has been temporarily replaced by Ban Al Bakri who will support CT3 until end April 2015



A more permanent solution for CT3 support is being pursued

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Current Resource Allocation



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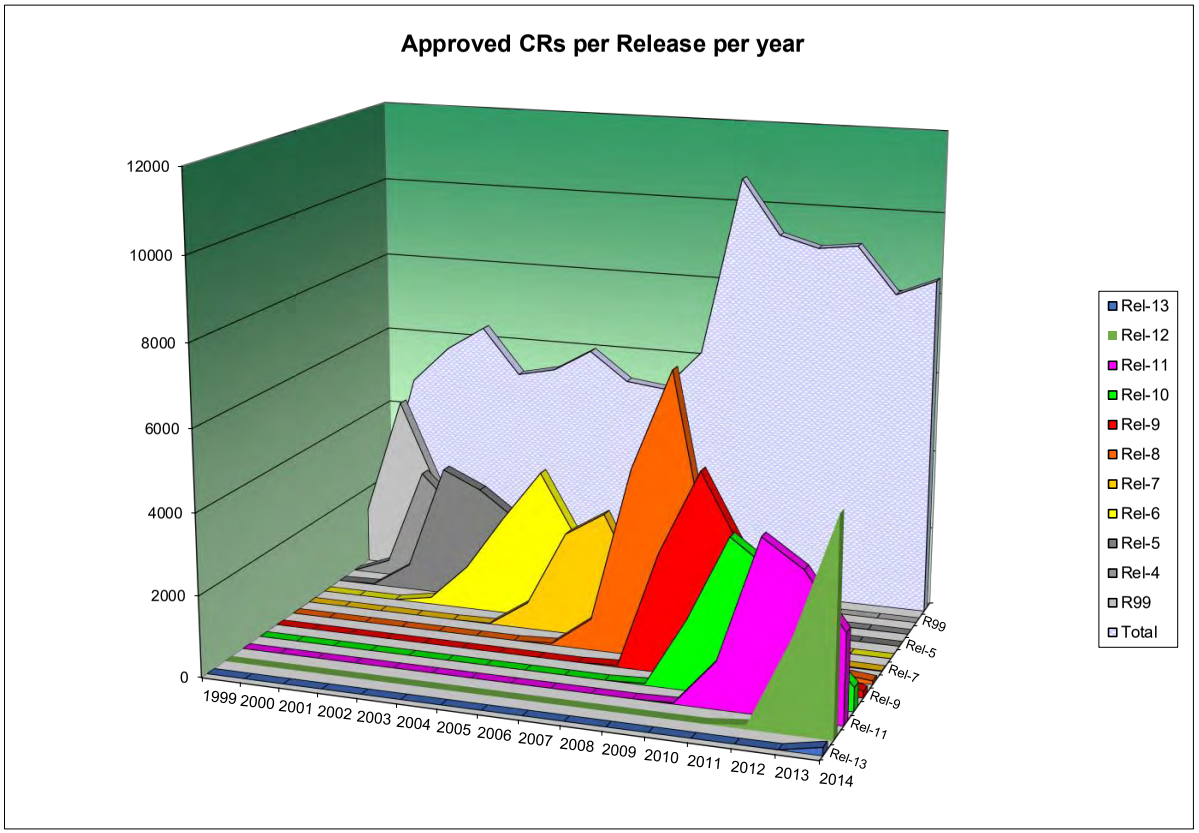
Workload

Approved CRs per Release per Year

Release	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
R99	1408	4398	2266	1004	581	512	111	42	23	5	5	1	0				**10356**
Rel-4		376	2828	1900	690	257	122	63	48	22	20	13	11	8	7	2	**6367**
Rel-5		27	644	3274	2842	2162	1357	509	94	25	22	7	7	5	3	2	**10980**
Rel-6				172	1088	2458	3721	2074	1078	212	74	19	17	10	4	4	**10931**
Rel-7					1	20	663	2529	3132	1262	492	176	91	43	25	15	**8449**
Rel-8								49	777	4609	7073	2347	706	347	184	91	**16183**
Rel-9										49	2918	4991	3252	1366	376	165	**13117**
Rel-10											47	1722	3800	3103	1636	584	**10892**
Rel-11												32	1152	4178	3525	2186	**11073**
Rel-12													6	102	2254	5181	**7543**
Rel-13															8	200	**208**
Total	**1408**	**4801**	**5738**	**6350**	**5202**	**5409**	**5974**	**5266**	**5152**	**6184**	**10651**	**9308**	**9042**	**9162**	**8022**	**8430**	**106099**

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Workload
Approved CRs per Release per Year



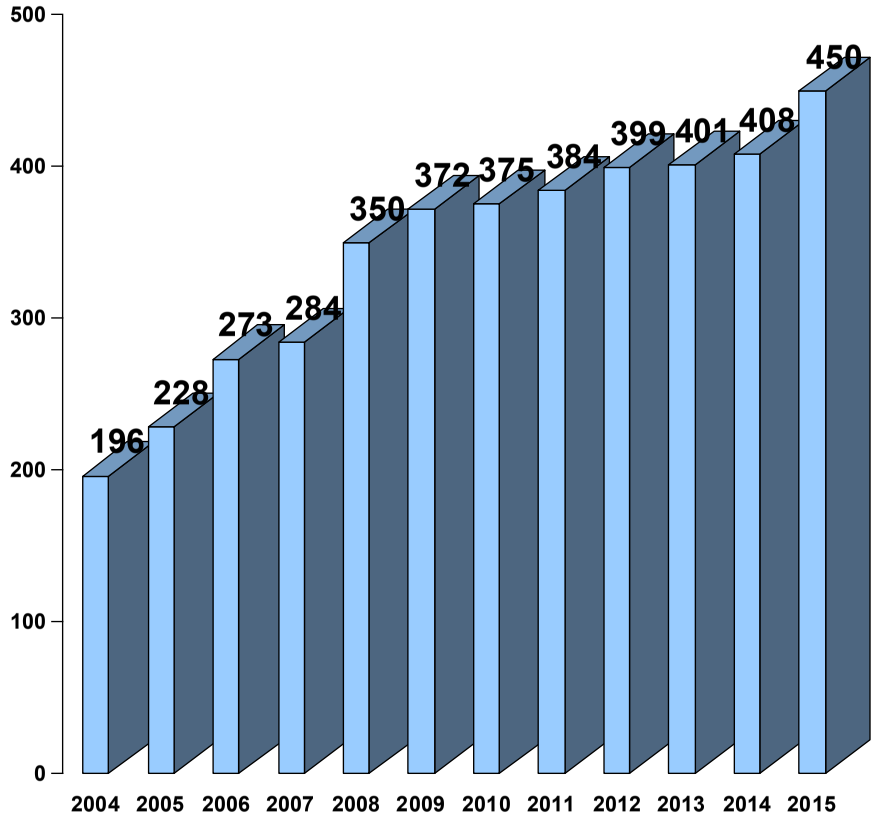
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3GPP Membership

3GPP Membership has peaked in 2015 with *450* Individual Members. In addition, there are 23 companies having Guest Status, which are potential IMs

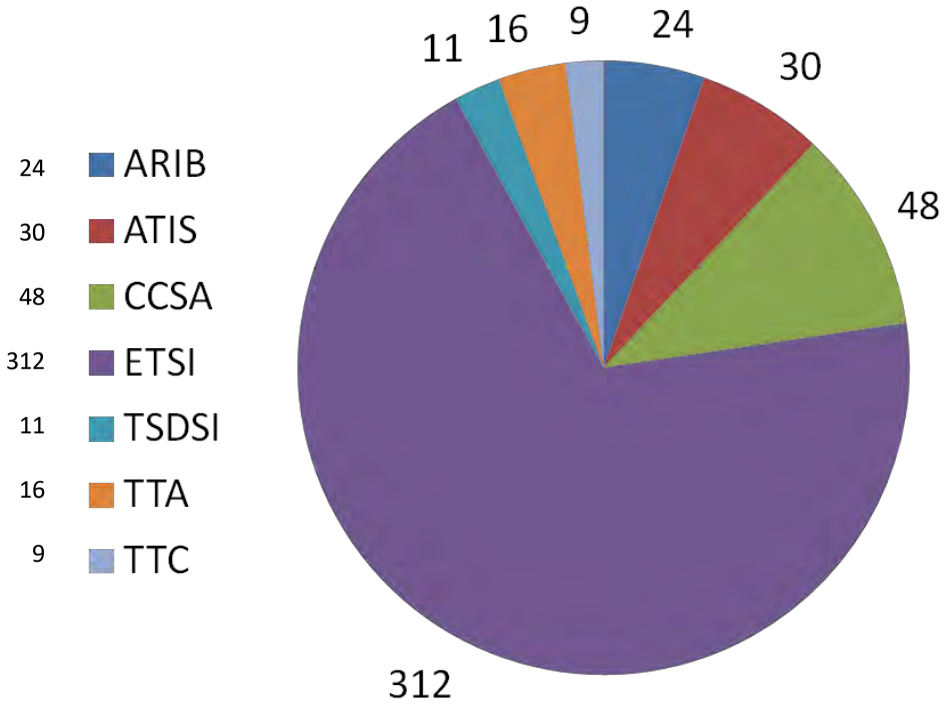
Number of Individual Members in 3GPP

3GPP Individual Members come from 41 Countries worldwide



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Individual Members in 3GPP

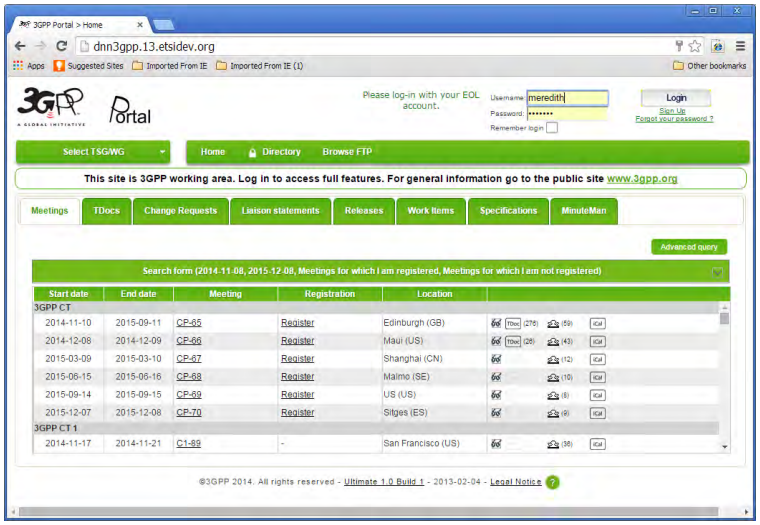


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3GPP Ultimate Project (3GU)

Data import from the old databases to the 3GPP Ultimate portal occurred in early January 2015. The 3GU database is now the master source for specs and releases. Over the coming months, 3GU will be the prime source of progressively more data. At present, the 3GPP web site http://www.3gpp.org and the 3GU portal http://portal.3gpp.org both offer information on meetings, specifications, tdocs, CRs, etc, and both should be aligned.

Several WGs (e.g., RAN1, SA1, SA6, CT3, CT4, CT6) plus CT plenary have used 3GU for TDoc number allocation, and though some bugs have been reported, the feedback from MCC secretaries and delegates alike has been generally very positive. We expect all groups to be using 3GU by 2015 Q3,



" Our experience of using 3GU tool for allocating and uploading the tdocs has been very impressive. Even dozens of tdocs were uploaded all together in just few seconds. This has saved many hours of our effort that in the past was needed for uploading tdocs via the old ADN! So this is really a big improvement in efficiency. "

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Summary and Outlook

The number of IMs within 3GPP continues to grow and the advent of 5G work is likely to add to that increase. This will change the dynamics within the project over time.

The workload within 3GPP is relatively constant although there is a slight increase in the number of physical meetings.

Discussions on the organizational structure within 3GPP continue (*cf* RAN/GERAN) and this will be monitored to ensure that support resources are always commensurate with the project structure.

Improvements in 3GPP tooling are well underway and the effectiveness of these tools will become more apparent towards the end of 2015.

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Appendix 8

The 3G IP Multimedia Subsystem (IMS)

Merging the Internet and the Cellular Worlds

Gonzalo Camarillo and Miguel A. García-Martín

Both of
Ericsson, Finland



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Chapter 2

The History of the IMS Standardization

In Chapter 1 we mentioned that the IMS uses Internet protocols. When the IMS needs a protocol to perform a particular task (e.g., to establish a multimedia session), the standardization bodies standardizing the IMS take the Internet protocol intended for that task and specify its use in the IMS. Still, no matter how simple this may sound the process of choosing protocols to be used in the IMS can sometimes get tricky. Sometimes, the Internet protocol that is chosen lacks some essential functionality, or does not even exist at all. When this happens the IMS standardization bodies contact the standardization body developing Internet protocols to work together on a solution. We will cover this collaboration in Section 2.5. Nevertheless, before jumping into that we will introduce in Section 2.1 all the standardization bodies involved in IMS development. We need to know who is who and which functions of the IMS each of them performs.

2.1 Relations between IMS-related Standardization Bodies

The ITU (International Telecommunication Union) IMT-2000 (International Mobile Telecommunications-2000) is the global standard for 3G (third generation) networks. IMT-2000 is the result of the collaboration between different standards bodies and aims at providing access to telecommunication services using radio links, which include satellite and terrestrial networks.

We will focus on two of the standard bodies involved in IMT-2000: 3GPP (Third Generation Partnership Project) and 3GPP2 (Third Generation Partnership Project 2). Still, they are not the only ones working within IMT-2000. Other bodies, such as the ITU-R (ITU-Radiocommunication Sector), for instance, are also involved in IMT-2000 but on different areas than the IMS.

Both 3GPP and 3GPP2 have standardized their own IMS (IP Multimedia Subsystem). The 3GPP IMS and the 3GPP2 IMS are fairly similar, but, nevertheless, have a few differences (Appendix A lists the most important differences).

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An important similarity between the 3GPP IMS and the 3GPP2 IMS is that both use Internet protocols, which have been traditionally standardized by the IETF (Internet Engineering Task Force). Consequently, both 3GPP and 3GPP2 collaborate with the IETF in developing protocols that fulfill their requirements. The following sections introduce the IETF, 3GPP, and 3GPP2 and provide a brief history of the IETF-3GPP/3GPP2 collaboration.

In addition to the standard bodies we have just mentioned, OMA (Open Mobile Alliance [144]) will play an important role in developing IMS services in the near future. While 3GPP and 3GPP have standardized (or are standardizing) a few IMS services, such as basic video calls or conferencing, from now on OMA will focus on service standardization for the IMS (of course, other standard bodies and third parties besides OMA may also develop services for the IMS).

2.2 Internet Engineering Task Force (IETF)

The Internet Engineering Task Force (IETF) is a loosely self-organized collection of network designers, operators, vendors, and research institutions that work together to develop the architecture, protocols, and operation of the public Internet. The IETF is body that is open to any interested individual. The IETF is not a corporation and, therefore, does not have a board of directors, members, nor dues.

The IETF is the standardization body that has developed most of the protocols that are currently used on the Internet. The IETF does not standardize networks, architectures combining different protocols, the internal behaviour of nodes, nor APIs (Application Programming Interface). The IETF is the protocol factory for IP-related protocols.

2.2.1 Structure of IETF

Work in the IETF is organized in working groups. Each working group is chartered to perform specific tasks, such as the delivery of a precise set of documents. Each working group has from one to three chairs, who take care that the working group completes its chartered tasks in time. Working groups have a temporary lifetime; so, once they have delivered their documents, either they are rechartered or they cease to exist. Figure 2.1 shows a few, but not all, of the working groups in the IETF; there are more than 100 active working groups in the IETF. The complete up-to-date list of active working groups is available at:

`http://www.ietf.org/html.charters/wg-dir.html`

Working groups get an acronym name that identifies the chartered task. For instance, SIPPING is the acronym of "Session Initiation Protocol Investigation", SIMPLE is the acronym of "SIP for Instant Messaging and Presence Leveraging Extensions" or AAA for "Authentication, Authorization and Accounting".

A collection of working groups form an Area Directorate. There are currently eight areas, as illustrated in Figure 2.1.

Each area has one or two area directors who, together with the IETF chairman, form the IESG (Internet Engineering Steering Group). The IESG is the technical

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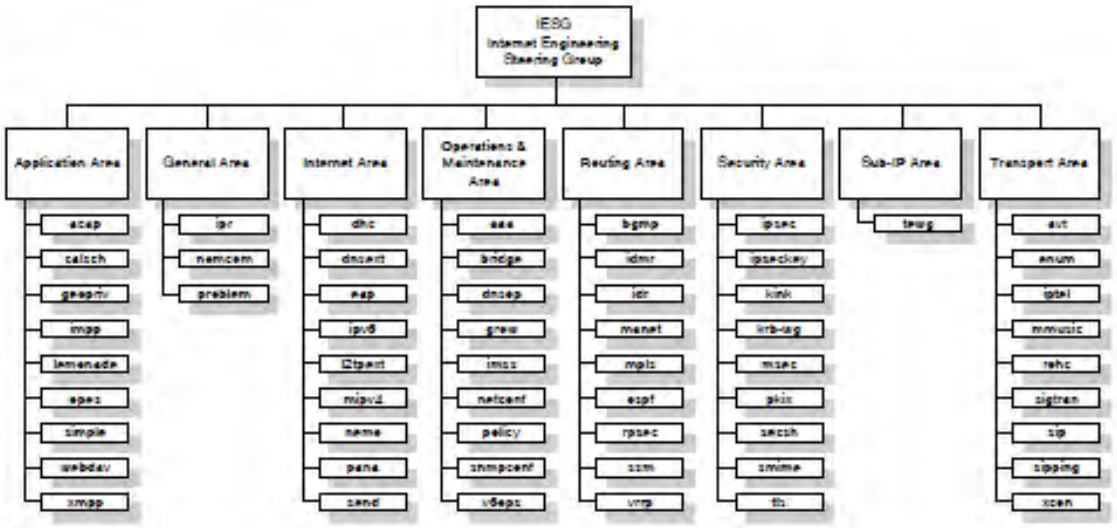


Figure 2.1: The structure of the IETF

management team of the IETF. They decide on which areas the IETF should work and review all the specifications that are produced.

The following web pages contain the complete list of the working groups of all areas and the charter of the SIPPING working group respectively.

`http://www.ietf.org/html.charters/wg-dir.html`
`http://www.ietf.org/html.charters/sipping-charter.html`

The IAB (Internet Architecture Board) is the body that provides technical leadership and handles appeals. Its web page is:

`http://www.iab.org/`

2.2.2 Working Group Operations

The technical work in the IETF is done within the working groups. Working groups do not have any kind of membership; they are formed by a number of volunteers that work as individuals. That is, they do not represent their companies when working for the IETF.

Most of the technical discussions within a working group take place in its mailing list. Even the decisions made at face-to-face meetings (held three times a year) have to be confirmed in the mailing list.

The technical documents used within the working groups are called Internet-Drafts. There are two types of them: individual submissions and working group items. Individual submissions are technical proposals submitted by an individual or individuals. If the working group decides that an individual submission is a good starting point to work on a particular topic, it becomes a working group item.

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Individual submissions and working group items can be distinguished by the name of the file where they are stored. Individual submissions start with:

```
draft-author's_name
```

while working group items start with:

```
draft-ietf-name_of_the_working_group
```

A list of all the Internet-Drafts can be found at:

```
http://www.ietf.org/internet-drafts/
```

When a working group feels that a working group item is ready for publication as an RFC the working group chairs send it to the IESG. The IESG may provide feedback to the working group (e.g., ask that working group to change something in the draft) and, eventually, decides whether or not a new RFC is published.

Although most of the Internet-Drafts that the IESG receives come from working groups an individual may also submit an Internet-Draft to the IESG. This usually happens with topics that are not large enough to grant the creation of a working group, but which, nevertheless, are of interest to the Internet community.

It is important to note that Internet-Drafts, even if they are working group items, represent work in progress and should only be referenced as such. Internet-Drafts are temporary documents that expire and cease to exist six months after they are issued. They can change at any time without taking into consideration backward compatibility issues with existing implementations. Only when a particular Internet-Draft becomes an RFC can it be considered a stable specification.

2.2.3 Types of RFCs

The technical documents produced by the IETF are called RFCs (Request For Comments). According to the contents of the document there are three main types of RFCs:

- Standards-track RFCs.
- Non-standards-track RFCs.
- BCP (Best Current Practise) RFCs.

Standards-track RFCs typically define protocols and extensions to protocols. According to the maturity of the protocol there are three levels of standards-track RFCs: proposed standard, draft standard, and Internet standard. Standards-track specifications are supposed to advance from proposed to draft and, finally, to Internet standard as they get more and more mature. An important requirement in this process is that a particular specification is implemented by several people to show that different independently built implementations that follow the same specification can successfully interoperate.

Nevertheless, in practise only a few RFCs reach the draft standard level and even fewer become Internet standards. At present, the specifications of many protocols that are used massively on the Internet are proposed standards.

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There are three types of non-standards-track RFCs: experimental, informational, and historical (which are called *historic* RFCs). Experimental RFCs specify protocols with a very limited use, while informational RFCs provide information for the Internet community about some topic, such as a requirements document or a process. When a standards-track RFC becomes obsolete, it becomes a historic RFC.

BCP RFCs record the best current practise known to the community to perform a particular task. They may deal with protocol issues or with administrative issues.

Figure 2.2 shows the relations between all the RFC types. A list of all the RFCs published so far and their status can be fetched from:

`http://www.ietf.org/iesg/1rfc_index.txt`

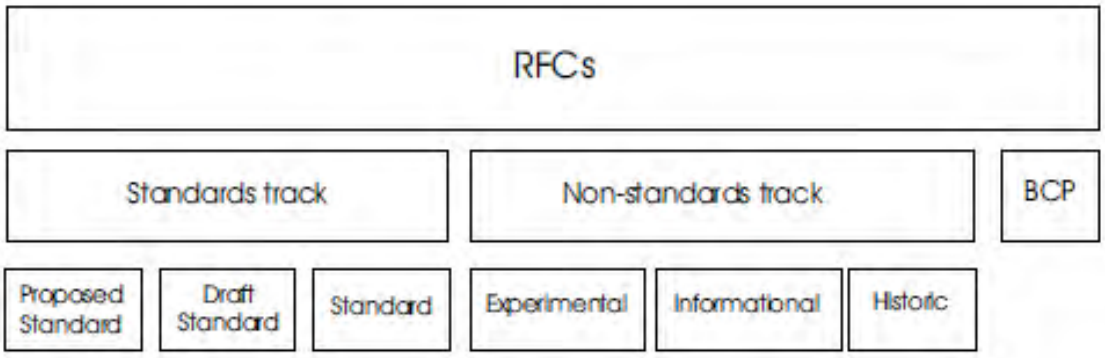


Figure 2.2: RFC types

RFCs can be downloaded from the following web page by just introducing the RFC number:

`http://www.ietf.org/rfc.html`

Additionally, the RFC Editor offers a web page that allows us to search for RFCs by title, number, author and keywords:

`http://www.rfc-editor.org/rfcsearch.html`

2.3 Third Generation Partnership Project (3GPP)

The Third Generation Partnership Project (3GPP) was born in 1998 as a collaboration agreement between a number of regional telecommunication standard bodies, known as *organizational partners*. The current 3GPP organizational partners are:

1. ARIB (Association of Radio Industries and Business) in Japan,

   `http://www.arib.or.jp/english/`

2. CCSA (China Communications Standards Associations) in China,

   `http://www.ccsa.org.cn/english/`

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3. ETSI (European Telecommunications Standards Institute) in Europe,

   `http://www.etsi.org/`

4. Committee T1 in the United States of America,

   `http://www.t1.org/`

5. TTA (Telecommunications Technology Association) of Korea

   `http://www.tta.or.kr/English/`

6. TTC (Telecommunication Technology Committee) in Japan,

   `http://www.ttc.or.jp/e/`

3GPP was originally chartered to develop globally applicable Technical Specifications and Technical Reports for a third-generation mobile system based on GSM. The scope has been reinforced to include maintenance and development of GSM specifications including the supported and evolved radio networks, technologies, and packet access technologies.

Besides the organizational partners, *market representation partners* provide the partnership with market requirements. Market representation partners include, among others, the UMTS Forum, 3G Americas, the GSM Association, the Global mobile Suppliers Association, the TD-SCDMA Forum, and the IPv6 Forum.

3GPP maintains an up-to-date web site at:

`http://www.3gpp.org/`

2.3.1 3GPP Structure

3GPP is organized in a Project Co-ordination Group (PCG) and Technical Specification Groups (TSGs), as illustrated in Figure 2.3. The PCG is responsible for the overall management of 3GPP, time plans, allocation of work, etc. The technical work is produced in the TSGs. At the moment there are five TSGs, responsible for the Core Network (CN), System and Services Aspects (SA), GSM EDGE Radio Access Network (GERAN), Radio Access Network (RAN), and Terminals (T). Each of the TSGs is further divided into Working Groups. Each of the Working Groups is allocated particular tasks. For instance, CN WG1 is responsible for all the detailed design of the usage of SIP and SDP in the IMS, CN WG3 for interworking aspects and CN4 for all the detailed design of the usage of Diameter. SA WG1 is responsible for the requirements, SA2 for the architecture, SA WG3 for the security aspects, SA WG4 for the codecs, and SA WG5 for the operation and maintenance of the network.

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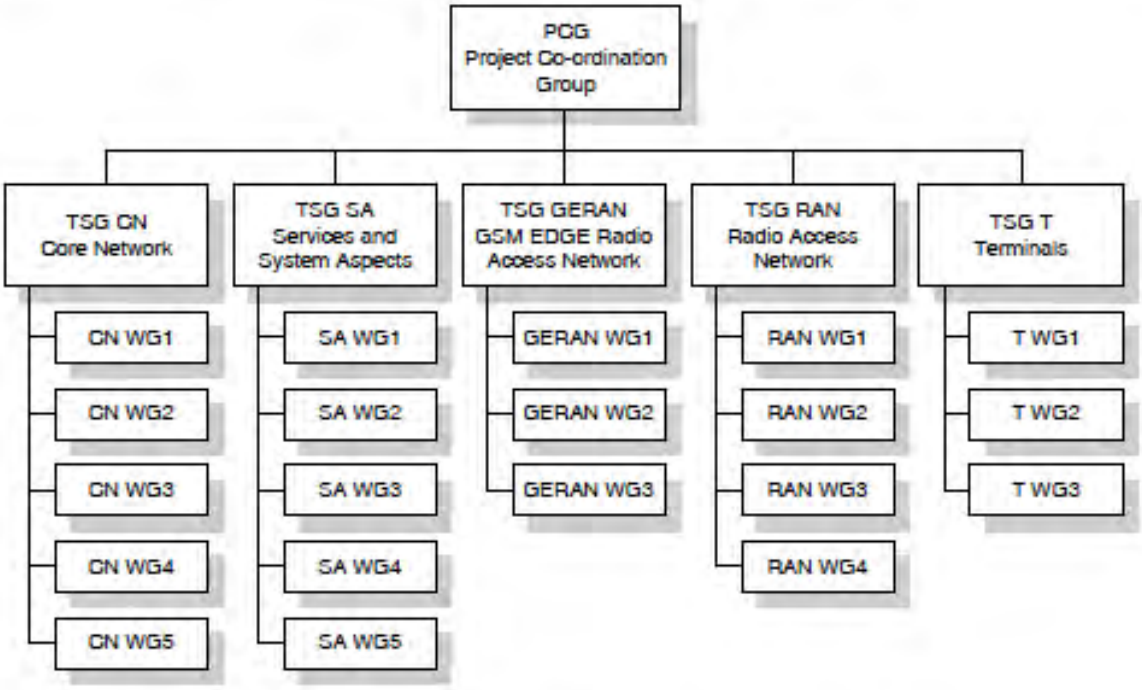


Figure 2.3: The structure of 3GPP

2.3.2 3GPP Deliverables

3GPP working groups do not produce standards. Instead, they produce Technical Specifications (TS) and Technical Reports (TR) that are approved by the TSGs. Once approved they are submitted to the organizational partners to be submitted to their respective standardization processes. The final part of the process is in the organizational partners' hands when they approve the TSs or TRs as part of their standards procedures. As a result, there is a set of globally developed standards that are ready to be used in a particular region.

3GPP TSs and TRs are numbered according to the sequence of four or five digits that follow the pattern "xx.yyy". The first two digits "xx" identify the series number, and the last two or three digits "yy" or "yyy" identify a particular specification within a series. For instance, 3GPP TS 23.228 [21] describes the architectural aspects of the IMS.

3GPP groups its specifications in what is called a *Release*. 3GPP Release 5 contains the first version of the IMS. 3GPP Release 6 contains enhancements to the IMS. The reader must note that the IMS is just a fraction of the 3GPP deliverables in a particular Release, as there are other non-IMS specifications included in a 3GPP Release. 3GPP TSs and TRs include a version number that follows the pattern "x.y.z", where "x" represents the 3GPP Release where the specification is published, "y" is the version number, and "z" is a sub-version number. So, 3GPP TS 23.228 version 5.8.0 means version 8.0 of the Release 5 version of TS 23.228.

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3GPP TSs and TRs are publicly available at the 3GPP web site at either of the following URIs:

`http://www.3gpp.org/specs/specs.htm`

`http://www.3gpp.org/ftp/Specs/archive/`

2.4 Third Generation Partnership Project 2 (3GPP2)

If 3GPP was born to evolve GSM specifications into a third-generation cellular system, the Third Generation Partnership Project 2 (3GPP2) was born to evolve North American and Asian cellular networks based on ANSI/TIA/EIA-41 standards and CDMA2000© radio access into a third-generation system. 3GPP2 like 3GPP is a partnership project whose members are also known as *organizational partners*. The current list of organizational partners include ARIB (Japan), CCSA (China), TIA (Telecommunications Industry Association) (North America), TTA (Korea), and TTC (Japan). Probably, the reader has noticed that most of them are also organizational partners of 3GPP.

Like 3GPP, 3GPP2 gets market requirements and advice from *market representation partners*. At the moment the list includes the IPv6 Forum and the CDMA Development Group.

2.4.1 3GPP2 Structure

The 3GPP2 structure mimics the structure of 3GPP, as illustrated in Figure 2.4. A Steering Committee (SC) is responsible for the overall standardization process and the planning. The technical work is done in Technical Specification Groups (TSGs). TSG-A is focused on the Access Network Interface, TSG-C on CDMA2000© technology, TSG-S on Service and System Aspects, and TSG-X in Intersystems Operations. TGS-X was born as a merger between the former TSG-N (Core Networks) and TSG-P (Packet Data) TSGs. The structure of TSN-X is not completely defined yet.

2.4.2 3GPP2 Deliverables

Like 3GPP, 3GPP2 does not produce standards but, instead, Technical Specifications (TSs) and Technical reports (TRs). The documents are created by the TSGs and approved by the SC. Then, they are submitted to the organizational partners to be submitted to their respective standardization processes.

3GPP2 TSs and TRs are numbered with a sequence of letters and digits that follows the scheme "A.Bxxxx-yyy-R" where "A" is a letter that represents the name of the TSG that delivers the document, "B" can be an "R" letter to indicate a TR or a requirements document, but it can also be an "S" letter to indicate a TS. "xxxx" is a sequential number allocated to the document. An optional "yyy" sequence of digits can further identify the chapter within a specification series. The "R" letter identifies the revision. The version number follows the specification and indicates a major and

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Appendix 9

3GPP MEMBERSHIP

2024-02-19 Version 1.1

New Query

Selected categories:

- **Individual Members (all partners)**

Choose csv separator : , export to csv file

INDIVIDUAL MEMBERS

Organization	Country	Partner
3in (Industrial Internet Innovation Center (Shanghai) Co.,Ltd.)	CHINA	CCSA
450connect GmbH (450connect GmbH)	GERMANY	ETSI
A.S.T.R.I.D. SA/NV (A.S.T.R.I.D. SA)	BELGIUM	ETSI
ABP, NRTA (Academy of Broadcasting Planning, NRTA)	CHINA	CCSA
ABS (Academy of Broadcasting Science)	CHINA	CCSA
AccelerComm Ltd (AccelerComm Ltd)	UNITED KINGDOM	ETSI
Acer Incorporated (Acer Incorporated)	TAIWAN, PROVINCE OF CHINA	ETSI
adare GmbH (adare GmbH)	GERMANY	ETSI
Airbus (Airbus DS SLC)	FRANCE	ETSI
albis-elcon system GermanyGmbH (albis-elcon system Germany GmbH)	GERMANY	ETSI
Alibaba (China) Group., Ltd. (Alibaba (China) Group., Ltd.)	CHINA	CCSA
Allot Ltd (Allot Ltd)	ISRAEL	ETSI
Altan Redes S.A.P.I. de C.V. (Altan Redes S.A.P.I. de C.V.)	MEXICO	ETSI
Amazon Web Services (Amazon Web Services EMEA SARL)	LUXEMBOURG	ETSI
Amdocs Software Systems Ltd (Amdocs Software Systems Limited)	IRELAND	ETSI
Analog Devices, Inc. (Analog Devices, Inc.)	UNITED STATES	ATIS
Anemone Technology (Anemone Technology)	DENMARK	ETSI
Anritsu Corporation (ANRITSU CORPORATION)	JAPAN	ARIB
Anritsu EMEA Ltd (Anritsu EMEA Ltd)	UNITED KINGDOM	ETSI
Anterix (Anterix)	UNITED STATES	ATIS
Apple (Apple Purchase Operation management)	CHINA	CCSA
Apple (Guizhou) (Apple Technology Services (Guizhou) Ltd.)	CHINA	CCSA

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Apple (UK) Limited **(Apple (UK) Limited)**	UNITED KINGDOM	ETSI
Apple (Ulanqab) **(Apple Technology Services (Ulanqab) Ltd)**	CHINA	CCSA
Apple AB Denmark **(Apple AB, filial AF Apple Aktiebolag, Sverige)**	DENMARK	ETSI
Apple Benelux B.V. **(Apple Benelux B.V.)**	NETHERLANDS	ETSI
Apple Benelux B.V. - Belgium **(Apple Benelux B.V. - Belgium Branch)**	BELGIUM	ETSI
Apple Computer Trading Co. Ltd **(Apple Computer Trading (Shanghai) Co., Ltd.)**	CHINA	CCSA
Apple Distribution Intl Ltd **(Apple Distribution International Limited)**	IRELAND	ETSI
Apple France **(Apple France)**	FRANCE	ETSI
Apple GmbH **(Apple GmbH)**	GERMANY	ETSI
Apple Inc **(Apple Inc)**	UNITED STATES	ATIS
Apple R&D **(Apple R&D)**	CHINA	CCSA
Apple Solutions **(Apple Solutions Consulting Services (Beijing) Company Limited)**	CHINA	CCSA
Apple Switzerland AG **(Apple Switzerland AG)**	SWITZERLAND	ETSI
Apple Trading **(Apple Trading (Shanghai) Company Limited)**	CHINA	CCSA
AQSACOM S.A.S. **(AQSACOM S.A.S.)**	FRANCE	ETSI
Arriver Software AB **(Arriver Software AB)**	SWEDEN	ETSI
ARTICLE19 **(ARTICLE19)**	UNITED KINGDOM	ETSI
ASELSAN **(ASELSAN Inc.)**	TÜRKIYE	ETSI
AsiaInfo **(AsiaInfo Technologies (China), Inc.)**	CHINA	CCSA
AsiaInfo Technologies Inc **(AsiaInfo Technologies Inc)**	CHINA	ETSI
ASR **(ASR Microelectronics Co., Ltd.)**	CHINA	CCSA
ASTRI **(Hong Kong Applied Science & Technology Research Institute)**	HONG KONG	ETSI
Astrome Technologies Pvt Lt **(Astrome Technologies Pvt Lt)**	INDIA	TSDSI
ASUSTEK COMPUTER (SHANGHAI) **(ASUSTEK COMPUTER (SHANGHAI) CO. LTD.)**	CHINA	CCSA
AT&T **(AT&T)**	UNITED STATES	ATIS
AT&T GNS Belgium SPRL **(AT&T Global Network Services Belgium SPRL)**	BELGIUM	ETSI
AT&T Labs, Inc **(AT&T Labs, Inc)**	UNITED STATES	ATIS
AT&T Services, Inc. **(AT&T Services, Inc.)**	UNITED STATES	ATIS
ATEME **(ATEME SA)**	FRANCE	ETSI
Avanti **(Avanti Communications Ltd)**	UNITED KINGDOM	ETSI
BAE Systems AI Ltd **(BAE Systems Applied Intelligence Limited)**	UNITED KINGDOM	ETSI
Baicells Technologies Co. Ltd **(Baicells Technologies Co. Ltd)**	CHINA	CCSA
BBC	UNITED KINGDOM	ETSI

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(BRITISH BROADCASTING CORPORATION)		
B-Com **(B-Com)**	FRANCE	ETSI
BDBOS **(Federal Agency for Public Safety Digital Radio)**	GERMANY	ETSI
BeammWave AB **(BeammWave AB)**	SWEDEN	ETSI
Beijing Lenovo Software Ltd. **(Beijing Lenovo Software Ltd.)**	CHINA	CCSA
BEIJING SAMSUNG TELECOM R&D **(BEIJING SAMSUNG TELECOM R&D CENTER)**	CHINA	CCSA
Beijing Xiaomi Electronics **(Beijing Xiaomi Electronics)**	CHINA	CCSA
Beijing Xiaomi Mobile Software **(Beijing Xiaomi Mobile Software Co., Ltd)**	CHINA	CCSA
Beijing Xiaomi Mobile Software **(Beijing Xiaomi Mobile Software Co., Ltd.)**	CHINA	ETSI
Beijing Xiaomi Software Tech **(Beijing Xiaomi Software Technology)**	CHINA	CCSA
Bell Mobility **(Bell Mobility)**	CANADA	ETSI
BfV **(Bundesamt für Verfassungsschutz)**	GERMANY	ETSI
Bharti Airtel Limited **(Bharti Airtel Limited)**	INDIA	TSDSI
BIFNC **(BRICS Institute of Future Network)**	CHINA	CCSA
BIPT **(BIPT - Belgian Institute for Postal services & Telecommunications)**	BELGIUM	ETSI
Bittium Wireless Ltd. **(Bittium Wireless Ltd.)**	FINLAND	ETSI
BJTU **(Beijing Jiaotong University)**	CHINA	CCSA
BKA **(Bundeskriminalamt)**	GERMANY	ETSI
Bluetest AB **(Bluetest AB)**	SWEDEN	ETSI
BMF **(Austrian Federal Ministry of Finance)**	AUSTRIA	ETSI
BMWK **(Bundesministerium für Wirtschaft und Klimaschutz)**	GERMANY	ETSI
BOCRA **(Botswana Communications Regulatory Authority)**	BOTSWANA	ETSI
BOUYGUES Telecom **(BOUYGUES Telecom)**	FRANCE	ETSI
Broadcom (EU) **(Broadcom Europe Ltd)**	UNITED KINGDOM	ETSI
BSI (DE) **(Bundesamt für Sicherheit in der Informationstechnik)**	GERMANY	ETSI
BSNL **(Bharat Sanchar Nigam Limited)**	INDIA	TSDSI
BT plc **(British Telecommunications plc)**	UNITED KINGDOM	ETSI
BTL Inc. **(BTL Inc.)**	CHINA	ETSI
BTPDI **(Beijing Telecom Planning & Designing Institute Co.,LTD.)**	CHINA	CCSA
BUPT **(Beijing University of Posts and Telecommunications)**	CHINA	CCSA
Bureau Veritas ADT **(Bureau Veritas Consumer Products Services (Hong Kong) Limited, Taoyuan Branch)**	TAIWAN, PROVINCE OF CHINA	ETSI
Bytedance **(Bytedance (Nanjing) Technology Research and Development Co., Ltd.)**	CHINA	CCSA
C Spire Wireless **(C Spire Wireless)**	UNITED STATES	ATIS

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CableLabs **(CableLabs)**	UNITED STATES	ETSI
Cadence Design Systems Inc. **(Cadence Design Systems Inc.)**	UNITED STATES	ETSI
CAICT. **(China Academy of Information and Communications Technology)**	CHINA	CCSA
CALTTA **(CALTTA TECHNOLOGIES CO., LTD.)**	CHINA	CCSA
Cambium Networks Limited **(Cambium Networks Limited)**	UNITED KINGDOM	ETSI
CAMBRIDGE CONSULTANTS LTD **(CAMBRIDGE CONSULTANTS LTD)**	UNITED KINGDOM	ETSI
CANON Research Centre France **(CANON Research Centre France SAS)**	FRANCE	ETSI
Casa Systems Inc. **(Casa Systems Inc.)**	UNITED STATES	ETSI
Catapult **(Satellite Applications Catapult Ltd)**	UNITED KINGDOM	ETSI
CATT **(China Academy of Telecommunications Technology (CATT))**	CHINA	ETSI
CATT **(China Academy of Telecommunication Technology - (Datang Telecom Technology and Industry Group))**	CHINA	CCSA
CBN **(China Broadcasting Network Group Corporation Ltd.)**	CHINA	CCSA
CCU **(National Chung Cheng University)**	TAIWAN, PROVINCE OF CHINA	ETSI
C-DAC **(Centre for Development of Advanced Computing)**	INDIA	TSDSI
C-DOT **(C-DOT)**	INDIA	TSDSI
CEA **(Commissariat à l'Energie Atomique et aux Energies Alternatives)**	FRANCE	ETSI
Cellnex **(Cellnex Telecom)**	SPAIN	ETSI
CENC **(CETC Network & Communications Group Co., Ltd.)**	CHINA	CCSA
CEPRI **(China Electric Power Research Institute)**	CHINA	CCSA
Ceragon Networks AS **(Ceragon Networks AS)**	NORWAY	ETSI
CERTH **(CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS)**	GREECE	ETSI
cetecom advanced GmbH **(cetecom advanced GmbH)**	GERMANY	ETSI
CEWiT **(Centre of Excellence in Wireless Technology (CEWiT))**	INDIA	TSDSI
CGL **(CHAZAH GROUP LTD)**	UGANDA	ETSI
Charter Communications, Inc **(Charter Communications, Inc)**	UNITED STATES	ATIS
Chengdu OPPO Telecommunication **(Chengdu OPPO Mobile Telecommunications Corp., ltd.)**	CHINA	CCSA
CHENGDU TD TECH LTD. **(CHENGDU TD TECH LTD.)**	CHINA	CCSA
China Broadnet **(China Broadnet Mobile Communications Co., Ltd.)**	CHINA	CCSA
China Mobile (Hangzhou) Inf. **(China Mobile (Hangzhou) Information Technology Co., Ltd.)**	CHINA	CCSA
China Mobile (Suzhou) Software **(China Mobile (Suzhou) Software Technology Co., Ltd.)**	CHINA	CCSA
China Mobile Com. Corporation **(China Mobile Communications Corporation (CMCC))**	CHINA	CCSA
China Mobile E-Commerce Co. **(China Mobile E-Commerce Co.)**	CHINA	CCSA
China Mobile Group Device Co.	CHINA	CCSA

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(China Mobile Group Device Co., Ltd)		
China Mobile International Ltd **(China Mobile International Limited)**	CHINA	CCSA
China Mobile M2M Company Ltd. **(China Mobile M2M Company Ltd.)**	CHINA	CCSA
China Southern Power Grid Co. **(China Southern Power Grid Co., Ltd.)**	CHINA	CCSA
China Telecom Corporation Ltd. **(China Telecom Corporation Ltd.)**	CHINA	CCSA
China Telecommunications **(China Telecommunications Corporation)**	CHINA	ETSI
China Telecomunication Corp. **(China Telecomunication Corporation)**	CHINA	CCSA
China Unicom **(China Unicom)**	CHINA	CCSA
Chinatelecom Cloud **(China Telecom Cloud Technology Co., Ltd)**	CHINA	CCSA
Chongqing University **(Chongqing University)**	CHINA	CCSA
Chosun University **(Chosun University)**	KOREA (REPUBLIC OF)	TTA
CHTTL **(Chunghwa Telecommunication Laboratories, Chunghwa Telecommunication Co.)**	TAIWAN, PROVINCE OF CHINA	ETSI
CICT **(China Information Communication Technologies Group)**	CHINA	ETSI
CICT **(China Information Communication Technologies Group Corporation)**	CHINA	CCSA
CICT Mobile **(CICT Mobile Communication Technology Co., Ltd.)**	CHINA	CCSA
CICTCI **(CICT Connected and Intelligent Technologies Co., Ltd)**	CHINA	CCSA
CIS **(Center for Internet Security)**	UNITED STATES	ETSI
CISA ECD **(Cybersecurity and Infrastructure Security Agency (CISA) ECD)**	UNITED STATES	ATIS
Cisco Systems **(Cisco Systems)**	UNITED STATES	ATIS
Cisco Systems Belgium **(Cisco Systems Belgium)**	BELGIUM	ETSI
Cisco Systems France **(Cisco Systems France)**	FRANCE	ETSI
CITC **(CHINA INFORMATION TECHNOLOGY DESIGNING&CONSULTING INSTITUTE CO.,LTD.)**	CHINA	CCSA
CKH IOD UK LIMITED **(CKH IOD UK LIMITED)**	UNITED KINGDOM	ETSI
CMDI **(China Mobile Group Design Institute Co., Ltd)**	CHINA	CCSA
CNC **(CLAP-N-CLANK)**	JAPAN	ETSI
CNES **(CNES - Centre National d'Etudes Spatiales)**	FRANCE	ETSI
Cobham SatCom A/S **(Thrane & Thrane A/S)**	DENMARK	ETSI
Cognyte **(Cognyte Technologies Israel Ltd.)**	ISRAEL	ETSI
Cohere Technologies **(Cohere Technologies)**	UNITED STATES	ATIS
Comba **(Comba Network Systems Company Limited)**	CHINA	CCSA
Comcast **(Comcast)**	UNITED STATES	ATIS
Comprion GmbH **(Comprion GmbH)**	GERMANY	ETSI
Comtech Telecommunications Cor **(Comtech Telecommunications Corp)**	UNITED STATES	ATIS

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Consort Digital **(Consort Digital Private Limited)**	INDIA	ETSI
Continental Automotive **(Continental Automotive Technologies GmbH)**	GERMANY	ETSI
Convida Wireless **(Convida Wireless, LLC)**	UNITED STATES	ETSI
Cosmian **(Cosmian Tech SAS)**	FRANCE	ETSI
COSMOTE S.A. **(COSMOTE MOBILE TELECOMMUNICATIONS S.A.)**	GREECE	ETSI
CQUPT **(Chongqing University of Posts and Telecommunications)**	CHINA	CCSA
Crosscall **(Crosscall)**	FRANCE	ETSI
CSA **(Cyber Security Agency of Singapore)**	SINGAPORE	ETSI
CSCN **(CHINA SATELLITE NETWORK GROUP CO., LTD.)**	CHINA	CCSA
CSIRO **(Commonwealth Scientific and Industrial Research Organisation)**	AUSTRALIA	ETSI
cstconsultancy **(CyberSecurity & Technology Consultancy LTD)**	UNITED KINGDOM	ETSI
CTSI **(China Telecom System Integration Co., Ltd)**	CHINA	CCSA
CTTC **(Centre tecnologic de Telecomunicacions de Catalunya)**	SPAIN	ETSI
CU Digital Technology **(China Unicom Digital Technology Co., Ltd.)**	CHINA	CCSA
CUC **(Communication University of China)**	CHINA	CCSA
CUG **(China Unicom Global Limited)**	CHINA	CCSA
Cybercore **(Beijinig Cybercore Technology Co., Ltd.)**	CHINA	CCSA
Cygnusemi **(Cygnusemi)**	CHINA	CCSA
Czech Telecommunication Office **(Czech Telecommunication Office)**	CZECH REPUBLIC	ETSI
DAC-UPC **(Departamento de Arquitectura de Computadores de la Universidad Politecnica de Cataluna (DAC-UPC))**	SPAIN	ETSI
DanKook University **(DanKook University)**	KOREA (REPUBLIC OF)	TTA
DARS TELECOM S.L. **(DARS TELECOM S.L.)**	SPAIN	ETSI
Datang Linktester Technology **(Datang Linktester Technology Co., Ltd.)**	CHINA	CCSA
Datang Mobile Com. Equipment **(Datang Mobile Communications Equipment Co., Ltd)**	CHINA	CCSA
DEKRA **(DEKRA testing and Certification, S.A.U.)**	SPAIN	ETSI
Dell Technologies **(Dell Technologies)**	UNITED STATES	ATIS
DENSO CORPORATION **(DENSO CORPORATION)**	JAPAN	ARIB
Department of Telecom **(Department of Telecommunications)**	INDIA	TSDSI
Dept of Home Affairs **(Department of Home Affairs)**	AUSTRALIA	ETSI
Deutsche Telekom AG **(Deutsche Telekom AG)**	GERMANY	ETSI
DIGG **(Agency for Digital Government)**	SWEDEN	ETSI
DISA **(Defense Information Systems Agency)**	UNITED STATES	ATIS
Dish Network	UNITED STATES	ATIS

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(Dish Network)		
DLR **(Deutsches Zentrum für Luft- und Raumfahrt e.V.)**	GERMANY	ETSI
DOCOMO Beijing Labs **(DOCOMO Beijing Communications Laboratories Co., Ltd)**	CHINA	CCSA
DOCOMO Communications Lab. **(DOCOMO Communications Laboratories Europe GmbH)**	GERMANY	ETSI
Dolby France SAS **(Dolby France SAS)**	FRANCE	ETSI
Dolby Germany GmbH **(Dolby Germany GmbH)**	GERMANY	ETSI
Dolby Sweden AB **(Dolby Sweden AB)**	SWEDEN	ETSI
Douyin **(Beijing Douyin Information Service Co., Ltd.)**	CHINA	CCSA
DP **(DigitalPlatforms SpA)**	ITALY	ETSI
DSIT **(Department for Science, Innovation and Technology)**	UNITED KINGDOM	ETSI
DTCY **(Deloitte Tohmatsu Cyber LLC)**	JAPAN	TTC
DTS Licensing Limited **(DTS Licensing Limited)**	IRELAND	ETSI
EBU **(EBU - European Broadcasting Union)**	SWITZERLAND	ETSI
ECTL **(Enhanced Communications & Technologies Pvt Ltd)**	INDIA	TSDSI
EDF Recherche et Développement **(EDF)**	FRANCE	ETSI
EFORT **(Etudes et Formations en Telecommunication)**	FRANCE	ETSI
Elbit Systems **(Elbit Systems C4I and Cyber Ltd)**	ISRAEL	ETSI
Element Materials Technology **(Element Materials Technology Warwick Ltd)**	UNITED KINGDOM	ETSI
Elena **(Elena Geo Systems Pvt Ltd)**	INDIA	TSDSI
Embotech AG **(Embotech AG)**	SWITZERLAND	ETSI
EMITE **(EMITE Ingenieria S.L.)**	SPAIN	ETSI
ENENSYS **(ENENSYS Technologies SA)**	FRANCE	ETSI
Ericsson España S.A. **(Ericsson España S.A.)**	SPAIN	ETSI
Ericsson France S.A.S **(Ericsson France S.A.S)**	FRANCE	ETSI
Ericsson GmbH, Eurolab **(Ericsson GmbH, Eurolab - Unternehmensbereich Forschung und Entwicklung)**	GERMANY	ETSI
Ericsson Hungary Ltd **(Ericsson Hungary Ltd)**	HUNGARY	ETSI
Ericsson Inc. **(Ericsson Incorporated)**	UNITED STATES	ATIS
Ericsson India Private Limited **(Ericsson India Private Limited)**	INDIA	TSDSI
Ericsson Japan K.K. **(Ericsson Japan K.K.)**	JAPAN	ARIB
Ericsson Limited **(Ericsson Limited)**	UNITED KINGDOM	ETSI
Ericsson LM **(Ericsson Telefonaktiebolaget LM)**	SWEDEN	ETSI
Ericsson Telecomunicazioni SpA **(Ericsson Telecomunicazioni SpA)**	ITALY	ETSI
Ericsson-LG Co., LTD **(Ericsson-LG Co., LTD)**	KOREA (REPUBLIC OF)	TTA

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Erillisverkot **(Suomen Erillisverkot Oy)**	FINLAND	ETSI
ERNET India **(ERNET India)**	INDIA	TSDSI
ESA **(ESA - European Space Agency)**	NETHERLANDS	ETSI
E-SPACE **(E-SPACE SAS)**	FRANCE	ETSI
ESSEN INNOVATION **(ESSEN INNOVATION COMPANY LIMITED)**	CHINA	CCSA
E-surfing Digital **(E-surfing Digital Life Technology Co., Ltd)**	CHINA	CCSA
Esurfing IoT **(Esurfing IoT Tech Co., Ltd)**	CHINA	CCSA
ETELM **(Electronique Telematique ETELM)**	FRANCE	ETSI
Etherstack Wireless Limited **(Etherstack Wireless Limited)**	UNITED KINGDOM	ETSI
ETRI **(Electronics & Telecommunications Research Institute)**	KOREA (REPUBLIC OF)	TTA
ETS-Lindgren Europe **(ETS-Lindgren Europe)**	FINLAND	ETSI
EURECOM **(EURECOM)**	FRANCE	ETSI
Eurofins KCTL **(Eurofins KCTL Co. Ltd)**	KOREA (REPUBLIC OF)	ETSI
European Commission **(EC - European Commission)**	BELGIUM	ETSI
European Patent Organisation **(European Patent Organisation)**	GERMANY	ETSI
EUTC **(European Utilities Telecom Council (EUTC))**	BELGIUM	ETSI
Eutelsat Group **(Eutelsat S.A.)**	FRANCE	ETSI
EVE Compliancy Solutions **(EVE Compliancy Solutions)**	NETHERLANDS	ETSI
Everactive **(Everactive)**	UNITED STATES	ATIS
F5 **(F5, Inc.)**	UNITED STATES	ETSI
Fabasoft AG **(Fabasoft AG)**	AUSTRIA	ETSI
Facebook Japan G.K. **(Facebook Japan G.K.)**	JAPAN	ARIB
Fastweb S.p.A. **(Fastweb S.p.A.)**	ITALY	ETSI
FAU **(Friedrich-Alexander-Universität Erlangen-Nürnberg)**	GERMANY	ETSI
FBK **(Fondazione Bruno Kessler)**	ITALY	ETSI
FCC **(Federal Communications Commission)**	UNITED STATES	ATIS
Fiberhome Technologies Group **(Fiberhome Technologies Group)**	CHINA	CCSA
FirstNet **(FirstNet)**	UNITED STATES	ATIS
FORCE Technology **(FORCE Technology)**	DENMARK	ETSI
Ford **(Ford Motor Company)**	UNITED STATES	ETSI
Fraunhofer FOKUS **(Fraunhofer Institute for Open Communication Systems FOKUS)**	GERMANY	ETSI
Fraunhofer HHI **(Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute)**	GERMANY	ETSI
Fraunhofer IIS	GERMANY	ETSI

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(Fraunhofer Institut für Integrierte Schaltungen IIS)		
Frequentis AG **(Frequentis AG)**	AUSTRIA	ETSI
Fujitsu Limited **(Fujitsu Limited)**	JAPAN	ETSI
Fujitsu Limited. **(Fujitsu Limited.)**	JAPAN	TTC
Fujitsu Limited.. **(Fujitsu Limited..)**	JAPAN	ARIB
Futurewei **(Futurewei Technologies Inc.)**	UNITED STATES	ETSI
Futurewei Technologies **(Futurewei Technologies)**	UNITED STATES	ATIS
G+D MS **(Giesecke+Devrient Mobile Security Germany GmbH)**	GERMANY	ETSI
Gatehouse Satcom A/S **(Gatehouse Satcom A/S)**	DENMARK	ETSI
GDCNI **(Guangdong Communications and Networks Institute)**	CHINA	CCSA
GE Network Technologies, LLC **(GE Network Technologies, LLC)**	UNITED STATES	ATIS
GEESPACE **(ZHE JIANG GEESPACE TECHNOLOGY CO., LTD.)**	CHINA	CCSA
Gigaset Communications GmbH **(Gigaset Communications GmbH)**	GERMANY	ETSI
Gilat **(Gilat Satellite Networks Ltd)**	ISRAEL	ETSI
GLOBALSTAR Inc. **(GLOBALSTAR Inc.)**	UNITED STATES	ETSI
GM - ATCI **(General Motors - ATCI)**	ISRAEL	ETSI
Google Inc. **(Google Inc.)**	UNITED STATES	ATIS
Group 2000 **(Group 2000 Nederland B.V.)**	NETHERLANDS	ETSI
GTRC **(Georgia Tech Research Corporation)**	UNITED STATES	ETSI
GUANGDONG GENIUS TECHNOLOGY CO **(GUANGDONG GENIUS TECHNOLOGY CO., LTD.)**	CHINA	CCSA
Guangdong OPPO Mobile Telecom. **(Guangdong OPPO Mobile Telecommunications Corp., Ltd)**	CHINA	CCSA
GW **(Greenerwave)**	FRANCE	ETSI
HA/ST **(HARTING Stiftung & Co. KG)**	GERMANY	ETSI
Hangzhou Douku **(Hangzhou Douku Software Technologies Co., Ltd.)**	CHINA	CCSA
Hangzhou Mengyuxiang **(Hangzhou Mengyuxiang Network Technology Corp., Ltd.)**	CHINA	CCSA
Harman GmbH **(Harman Becker Automotive Systems GmbH)**	GERMANY	ETSI
HEAD acoustics GmbH **(HEAD acoustics GmbH)**	GERMANY	ETSI
Hewlett-Packard Enterprise **(Hewlett-Packard Enterprise)**	FRANCE	ETSI
HiSilicon Technologies Co. Ltd **(HiSilicon Technologies Co.Ltd)**	CHINA	CCSA
HISPASAT SA **(HISPASAT SA)**	SPAIN	ETSI
HOME OFFICE **(HOME OFFICE)**	UNITED KINGDOM	ETSI
Honda Motor Co., Ltd **(Honda Motor Co., Ltd)**	JAPAN	ARIB
Honor **(Honor Device Co., Ltd)**	CHINA	ETSI

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Honor **(Honor Device Co., Ltd.)**	CHINA	CCSA
Huawei Device Co., Ltd **(Huawei Device Co., Ltd)**	CHINA	CCSA
HUAWEI TECH. GmbH **(HUAWEI TECHNOLOGIES Duesseldorf GmbH)**	GERMANY	ETSI
Huawei Tech.(UK) Co.. Ltd **(Huawei Technologies (UK) Co., Ltd.)**	UNITED KINGDOM	ETSI
Huawei Technologies (Korea) **(Huawei Technologies (Korea))**	KOREA (REPUBLIC OF)	TTA
HUAWEI TECHNOLOGIES Co. Ltd. **(Huawei Technologies Co. Ltd.)**	CHINA	ETSI
HuaWei Technologies Co., Ltd **(HuaWei Technologies Co., Ltd)**	CHINA	CCSA
Huawei Technologies France **(Huawei Technologies France)**	FRANCE	ETSI
Huawei Technologies Japan K.K. **(Huawei Technologies Japan K.K.)**	JAPAN	TTC
HUAWEI Technologies Japan K.K. **(HUAWEI Technologies Japan K.K.)**	JAPAN	ARIB
Huawei Technologies R&D UK **(Huawei Technologies Research & Development (UK) Limited)**	UNITED KINGDOM	ETSI
Huawei Technologies Sweden AB **(Huawei Technologies Sweden AB)**	SWEDEN	ETSI
Huawei Telecommunication India **(Huawei Telecommunication (India) Co. Pvt. Ltd.)**	INDIA	TSDSI
HUGHES Network Systems Ltd **(HUGHES Network Systems Ltd)**	UNITED KINGDOM	ETSI
Husqvarna AB **(Husqvarna AB (publ))**	SWEDEN	ETSI
Hytera Communications Corp. **(Hytera Communications Corporation Limited)**	CHINA	CCSA
Hyundai Motor Company **(Hyundai Motor Company)**	KOREA (REPUBLIC OF)	TTA
IBM Europe **(IBM Europe)**	GERMANY	ETSI
ICS **(Institute for Communication Systems - University of Surrey)**	UNITED KINGDOM	ETSI
IDEMIA **(IDEMIA)**	FRANCE	ETSI
IDRBT **(Institute for Development and Research in Banking Technology)**	INDIA	TSDSI
III **(Institute for Information Industry)**	TAIWAN, PROVINCE OF CHINA	ETSI
IIIT Bangalore **(International Institute of Information Technology - Bangalore)**	INDIA	TSDSI
IIIT Naya Raipur **(International Institute of Information Technology, Naya Raipur)**	INDIA	TSDSI
IISc, Bangalore **(Indian Institute of Science, Bangalor)**	INDIA	TSDSI
IIT Bhilai **(Indian Institute of Technology Bhilai)**	INDIA	TSDSI
IIT Bombay **(Indian Institute of Technology Bombay)**	INDIA	TSDSI
IIT Delhi **(Indian Institute of Technology Delhi)**	INDIA	TSDSI
IIT Gandhinagar **(Indian Institute of Technology Gandhinagar)**	INDIA	TSDSI
IIT JODHPUR **(Indian Institute of Technology Jodhpur)**	INDIA	TSDSI
IIT Kanpur **(Indidan Institute of Technology Kanpur)**	INDIA	TSDSI
IIT Mandi **(Indian Institute of Technology Mandi)**	INDIA	TSDSI
IIT Patna	INDIA	TSDSI

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(Indian Institute of Technology Patna)		
IIT, Kharagpur **(IIT, Kharagpur)**	INDIA	TSDSI
IMDA **(Infocomm Media Development Authority)**	SINGAPORE	ETSI
IMU **(Istanbul Medipol University)**	TÜRKIYE	ETSI
Indian Institute of Tech (H) **(Indian Institute of Technology Hyderabad)**	INDIA	TSDSI
Indian Institute of Tech (M) **(Indian Institute of Technology Madras)**	INDIA	TSDSI
INFINEON TECHNOLOGIES **(Infineon Technologies)**	GERMANY	ETSI
Inmarsat **(Inmarsat)**	UNITED KINGDOM	ETSI
Institut Mines-Telecom **(Institut Mines-Telecom)**	FRANCE	ETSI
Institute VEDECOM **(Institute VEDECOM)**	FRANCE	ETSI
Intel **(Intel)**	UNITED STATES	ATIS
Intel Belgium SA/NV **(Intel Belgium SA/NV)**	BELGIUM	ETSI
Intel China Ltd. **(Intel China Ltd.)**	CHINA	CCSA
Intel Corporation (UK) Ltd **(Intel Corporation (UK) Ltd)**	UNITED KINGDOM	ETSI
Intel Corporation Italia SpA **(Intel Corporation Italia SpA)**	ITALY	ETSI
Intel Corporation SAS **(Intel Corporation SAS)**	FRANCE	ETSI
Intel Deutschland GmbH **(Intel Deutschland GmbH)**	GERMANY	ETSI
Intel Ireland **(Intel Ireland Ltd)**	IRELAND	ETSI
Intel K.K. **(Intel K.K.)**	JAPAN	ARIB
Intel Sweden AB **(Intel Sweden AB)**	SWEDEN	ETSI
Intel Technology India Pvt Ltd **(Intel Technology India Pvt. Ltd.)**	INDIA	TSDSI
Intel Technology Poland SP Zoo **(Intel Technology Poland SP Zoo)**	POLAND	ETSI
Intelsat **(Intelsat)**	UNITED STATES	ATIS
InterDigital Belgium. LLC **(InterDigital Belgium, LLC)**	BELGIUM	ETSI
InterDigital Canada **(InterDigital Canada)**	CANADA	ATIS
InterDigital Communications **(InterDigital Communications Corporation)**	UNITED STATES	ATIS
InterDigital Finland Oy **(InterDigital Finland Oy)**	FINLAND	ETSI
InterDigital France R&D, SAS **(InterDigital France R&D, SAS)**	FRANCE	ETSI
InterDigital New York **(InterDigital New York)**	UNITED STATES	ATIS
InterDigital Pennsylvania **(InterDigital Pennsylvania)**	UNITED STATES	ATIS
InterDigital, Europe, Ltd. **(InterDigital, Europe, Ltd.)**	UNITED KINGDOM	ETSI
InterDigital, Inc. **(InterDigital, Inc.)**	UNITED STATES	ETSI
Intersec **(Intersec SA)**	FRANCE	ETSI

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Intertek **(Intertek)**	UNITED KINGDOM	ETSI
IPCom GmbH & Co.KG **(IPCom GmbH & Co.KG)**	GERMANY	ETSI
IPLOOK **(IPLOOK Networks Co., Ltd.)**	CHINA	CCSA
iQoo **(iQoo Software Technology (Shanghai) Co., Ltd.)**	CHINA	CCSA
Iridium Satellite LLC **(Iridium Satellite LLC)**	UNITED STATES	ATIS
IRT Saint Exupery **(Institut de recherche technologique Saint Exupery)**	FRANCE	ETSI
ISED **(Innovation, Science and Economic Development Canada)**	CANADA	ETSI
ISRO **(Indian Space Research Organisation)**	INDIA	TSDSI
ISSDU **(Information Security Service Digital United Inc.)**	TAIWAN, PROVINCE OF CHINA	ETSI
ITL **(Innovative Technology Lab Co., Ltd)**	KOREA (REPUBLIC OF)	TTA
ITOCHU Techno-Solutions Corp **(ITOCHU Techno-Solutions Corporation)**	JAPAN	TTC
ITRI **(Industrial Technology Research Institute)**	TAIWAN, PROVINCE OF CHINA	ETSI
ITRON SAS **(ITRON SAS)**	FRANCE	ETSI
Ittiam System Pvt Ltd **(Ittiam System Pvt Ltd)**	INDIA	TSDSI
Japan Radio Co., Ltd **(Japan Radio Co., Ltd)**	JAPAN	ARIB
Jetflow **(Jetflow Technologies Co., Ltd)**	CHINA	CCSA
Jio **(Jio Estonia OÜ)**	ESTONIA	ETSI
JMA Wireless **(JMA Wireless)**	UNITED STATES	ATIS
John Deere GmbH & Co. KG **(John Deere GmbH & Co. KG)**	GERMANY	ETSI
Johns Hopkins University APL **(Johns Hopkins University Applied Physics Laboratory)**	UNITED STATES	ATIS
JSI GmbH **(JSI GmbH)**	GERMANY	ETSI
Juniper Networks **(Juniper Networks)**	UNITED STATES	ETSI
Kapsch TrafficCom AG **(Kapsch TrafficCom AG)**	AUSTRIA	ETSI
KDDI Corporation **(KDDI Corporation)**	JAPAN	TTC
KDDI Corporation **(KDDI Corporation)**	JAPAN	ARIB
Kepler **(Kepler Communications GmbH)**	GERMANY	ETSI
Keysight Technologies UK Ltd **(Keysight Technologies UK Ltd)**	UNITED KINGDOM	ETSI
KIPO **(Korean Intellectual Property Office)**	KOREA (REPUBLIC OF)	TTA
Kontron Transportation France **(Kontron Transportation France S.A.S)**	FRANCE	ETSI
Korea Testing Laboratory **(Korea Testing Laboratory)**	KOREA (REPUBLIC OF)	TTA
KPN N.V. **(Koninklijke KPN N.V.)**	NETHERLANDS	ETSI
KRRI **(Korea Railroad Research Institute)**	KOREA (REPUBLIC OF)	TTA
KT Corp.	KOREA (REPUBLIC OF)	TTA

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(KT Corporation)		
Kymeta Corporation **(Kymeta Corporation)**	UNITED STATES	ETSI
Kyocera Corporation **(Kyocera Corporation)**	JAPAN	ARIB
Kyonggi University **(Kyonggi University)**	KOREA (REPUBLIC OF)	TTA
Kyoto University **(Kyoto University)**	JAPAN	ETSI
L.M. Ericsson Limited **(L.M. Ericsson Limited)**	IRELAND	ETSI
L3Harris Technologies **(L3Harris Technologies)**	UNITED STATES	ATIS
Langbo **(Shanghai Langbo Communication Technology Co., Ltd.)**	CHINA	CCSA
Lansus **(Lansus Technologies Inc.)**	CHINA	CCSA
LEGRAND FRANCE **(LEGRAND FRANCE ISERE)**	FRANCE	ETSI
Lekha Wireless Solutions **(Lekha Wireless Solutions Pvt Ltd)**	INDIA	TSDSI
Lenovo (Beijing) Ltd **(Lenovo (Beijing) Ltd)**	CHINA	CCSA
Lenovo Future Communications **(Lenovo Future Communications Technology (Chongqing) Co., Ltd.)**	CHINA	CCSA
Lenovo Information Technology **(Lenovo (Beijing) Information Technology Co., Ltd.)**	CHINA	CCSA
Leonardo SpA **(Leonardo SpA)**	ITALY	ETSI
LG Electronics Deutschland **(LG Electronics Deutschland GmbH)**	GERMANY	ETSI
LG Electronics Finland **(LG Electronics Finland Lab Oy)**	FINLAND	ETSI
LG Electronics France **(LG Electronics France)**	FRANCE	ETSI
LG Electronics Inc. **(LG Electronics Inc.)**	KOREA (REPUBLIC OF)	TTA
LG Electronics Polska **(LG Electronics Polska Sp. z.o.o.)**	POLAND	ETSI
LG Electronics UK **(LG Electronics UK Ltd)**	UNITED KINGDOM	ETSI
LG Uplus **(LG Uplus)**	KOREA (REPUBLIC OF)	TTA
Ligado Networks **(Ligado Networks)**	UNITED STATES	ETSI
LKA Niedersachsen **(Landeskriminalamt Niedersachsen)**	GERMANY	ETSI
Locaila **(Locaila)**	UNITED STATES	ATIS
Lockheed Martin **(Lockheed Martin)**	UNITED STATES	ATIS
Lynk Global **(Lynk Global)**	UNITED STATES	ATIS
Magister Solutions Ltd **(Magister Solutions Ltd)**	FINLAND	ETSI
Maketh Secure Limited **(Maketh Secure Limited)**	UNITED KINGDOM	ETSI
MATRIXX Software **(MATRIXX Software, Inc.)**	UNITED STATES	ETSI
Mavenir **(Mavenir Systems, Inc)**	UNITED STATES	ETSI
MaxWave Micro **(MaxWave Microelectronics Ltd.)**	CHINA	CCSA
MediaTek (Chengdu) Inc. **(MediaTek (Chengdu) Inc.)**	CHINA	CCSA

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MediaTek (Hefei) Inc. **(MediaTek (Hefei) Inc.)**	CHINA	CCSA
MediaTek (Shenzhen) Inc. **(MediaTek (Shenzhen) Inc.)**	CHINA	CCSA
MediaTek (Wuhan) Inc. **(MediaTek (Wuhan) Inc.)**	CHINA	CCSA
MediaTek Beijing Inc. **(MediaTek Beijing Inc.)**	CHINA	CCSA
MediaTek Inc. **(MediaTek Incorporated)**	TAIWAN, PROVINCE OF CHINA	ETSI
Mediatek India Technology Pvt. **(Mediatek India Technology Pvt. Ltd.)**	INDIA	TSDSI
MediaTek Korea Inc. **(MediaTek Korea Inc.)**	KOREA (REPUBLIC OF)	TTA
MediaTek UK **(MTK Wireless Ltd)**	UNITED KINGDOM	ETSI
MeitY **(Ministry of Electronics & Information Technology)**	INDIA	TSDSI
Meizu Technology **(Meizu Technology)**	CHINA	CCSA
Mercedes-Benz AG **(Mercedes-Benz AG)**	GERMANY	ETSI
Mesaqin.com s.r.o (Ltd.) **(Mesaqin.com s.r.o (Ltd.))**	CZECH REPUBLIC	ETSI
Meta India **(Meta India Online Services Pvt Ltd)**	INDIA	TSDSI
Meta Ireland **(Meta Platforms Ireland Ltd.)**	IRELAND	ETSI
Meta USA **(Meta USA)**	UNITED STATES	ATIS
Microchip Technology, Inc. **(Microchip Technology, Inc.)**	UNITED STATES	ATIS
Microsoft Europe SARL **(Microsoft Europe SARL)**	FRANCE	ETSI
MidWave Wireless **(MidWave Wireless)**	UNITED STATES	ATIS
MIMIT **(Ministry of Enterprises and Made in Italy)**	ITALY	ETSI
MinEA **(Ministry of Economic Affairs and Climate Policy)**	NETHERLANDS	ETSI
MINECO **(MINISTRY OF ECONOMIC AFFAIRS AND DIGITAL TRANSFORMATION)**	SPAIN	ETSI
MINISTERE DE L'INTERIEUR **(MINISTERE DE L'INTERIEUR)**	FRANCE	ETSI
Ministère Economie et Finances **(Ministère de l'Economie et des Finances)**	FRANCE	ETSI
Ministry of Transport SR **(Ministry of Transport of the Slovak Republic)**	SLOVAKIA	ETSI
MITRE Corporation **(MITRE Corporation)**	UNITED STATES	ETSI
Mitsubishi Electric Co. **(Mitsubishi Electric Co.)**	JAPAN	ARIB
Mitsubishi Electric Corp **(Mitsubishi Electric Corporation)**	JAPAN	TTC
Mitsubishi Electric RCE **(Mitsubishi Electric R&D Centre Europe)**	FRANCE	ETSI
Motorola Mobile Com Technology **(MOTOROLA MOBILE COMMUNICATION TECHNOLOGY LTD.)**	CHINA	CCSA
Motorola Mobility España SA **(Motorola Mobility España SA)**	SPAIN	ETSI
Motorola Mobility France S.A.S **(Motorola Mobility France S.A.S)**	FRANCE	ETSI
Motorola Mobility Germany GmbH **(Motorola Mobility Germany GmbH)**	GERMANY	ETSI
Motorola Mobility UK Ltd.	UNITED KINGDOM	ETSI

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(Motorola Mobility UK Ltd.)		
Motorola Solutions Germany **(Motorola Solutions Germany GmbH)**	GERMANY	ETSI
Motorola Solutions UK Ltd. **(Motorola Solutions UK Ltd.)**	UNITED KINGDOM	ETSI
MTCC **(Mobile Technology Convergence Center)**	KOREA (REPUBLIC OF)	TTA
Murata Manufacturing Co Ltd. **(Murata Manufacturing Co Ltd.)**	JAPAN	ARIB
MVG Industries **(MVG Industries)**	FRANCE	ETSI
Nanjing Ericsson Panda Com Ltd **(NANJING ERICSSON PANDA COMMUNICATIONS LTD)**	CHINA	CCSA
Nanjing Weibo **(Nanjing Weibo Software Technology Co., Ltd.)**	CHINA	CCSA
National Instruments Corp. **(National Instruments Corporation)**	UNITED STATES	ETSI
National Radio Research Agency **(National Radio Research Agency)**	KOREA (REPUBLIC OF)	TTA
National Spectrum Consortium **(National Spectrum Consortium)**	UNITED STATES	ATIS
National Technical Assistance **(National Technical Assistance Centre)**	UNITED KINGDOM	ETSI
nbn co Limited **(nbn co Limited (ABN 86 136 533 741))**	AUSTRALIA	ETSI
NCI Agency **(NATO Communication and Information Agency)**	NETHERLANDS	ETSI
NCIS **(National Criminal Investigation Service)**	NORWAY	ETSI
NCSC **(National Cyber Security Centre)**	UNITED KINGDOM	ETSI
NDRE **(National Defence Radio Establishment)**	SWEDEN	ETSI
NEC Corporation **(NEC Corporation)**	JAPAN	ARIB
NEC Corporation **(NEC Corporation)**	JAPAN	ETSI
NEC Corporation. **(NEC Corporation)**	JAPAN	TTC
NEC Europe Ltd **(NEC Europe Ltd)**	UNITED KINGDOM	ETSI
NEC Telecom MODUS Ltd. **(NEC Telecom MODUS Ltd.)**	UNITED KINGDOM	ETSI
NEMERGENT **(NEMERGENT SOLUTIONS SL)**	SPAIN	ETSI
NERCDTV **(Shanghai National Engineering Research Center of Digital Television Co.,Ltd.)**	CHINA	CCSA
Netherlands Police **(Netherlands Police, Division MDC)**	NETHERLANDS	ETSI
Netscout Systems Inc. **(Netscout Systems Inc.)**	UNITED STATES	ETSI
Network Rail **(Network Rail infrastructure limited)**	UNITED KINGDOM	ETSI
New H3C Technologies Co., Ltd. **(New H3C Technologies Co., Ltd.)**	CHINA	CCSA
NextNav **(NextNav)**	UNITED STATES	ATIS
NHK **(NHK (Japan Broadcasting Corporation))**	JAPAN	ARIB
NICT **(National Institute of Information and Communications Technology)**	JAPAN	ARIB
Niral **(Niral Networks Private Limited)**	INDIA	TSDSI
NIST **(National Institute of Standards and Technology)**	UNITED STATES	ATIS

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Nkom **(Norwegian Communications Authority)**	NORWAY	ETSI
Nokia **(Nokia)**	UNITED STATES	ATIS
Nokia Belgium **(Nokia Bell N.V.)**	BELGIUM	ETSI
Nokia Corporation **(Nokia Corporation)**	FINLAND	ETSI
Nokia Denmark **(Nokia Denmark A/S)**	DENMARK	ETSI
Nokia France **(Nokia Networks France)**	FRANCE	ETSI
Nokia Germany **(Nokia Solutions and Networks GmbH & Co. KG)**	GERMANY	ETSI
Nokia Hungary **(Nokia Solutions and Networks Kft.)**	HUNGARY	ETSI
Nokia Japan **(Nokia Japan)**	JAPAN	ARIB
Nokia Korea **(Nokia Korea)**	KOREA (REPUBLIC OF)	TTA
Nokia Poland **(Nokia Solutions and Networks Sp. z.o.o.)**	POLAND	ETSI
Nokia Shanghai Bell **(Nokia Shanghai Bell Co., Ltd)**	CHINA	CCSA
Nokia Solutions & Networks (I) **(Nokia Solutions and Networks India Pvt. Ltd.)**	INDIA	TSDSI
Nokia UK **(Nokia UK Ltd.)**	UNITED KINGDOM	ETSI
Nordic Semiconductor ASA **(Nordic Semiconductor ASA)**	NORWAY	ETSI
NOVAMINT **(NOVAMINT)**	UNITED KINGDOM	ETSI
NTIA **(National Telecommunications and Information Administration)**	UNITED STATES	ATIS
NTPU **(National Taipei University)**	TAIWAN, PROVINCE OF CHINA	ETSI
NTT **(Nippon Telegraph and Telephone Corporation (NTT))**	JAPAN	TTC
NTT corporation **(Nippon Telegraph and Telephone Corporation)**	JAPAN	ETSI
NTT DOCOMO INC. **(NTT DOCOMO INC.)**	JAPAN	TTC
NTT DOCOMO INC.. **(NTT DOCOMO INC.)**	JAPAN	ARIB
NTT-AT Corp. **(NTT Advanced Technology Corporation)**	JAPAN	TTC
NTU **(National Taiwan University)**	TAIWAN, PROVINCE OF CHINA	ETSI
Nubia Technology Co.,Ltd **(Nubia Technology Co.,Ltd)**	CHINA	CCSA
NUFRONT **(Nufront (Beijing) Technology Co., Ltd.)**	CHINA	CCSA
NVIDIA **(NVIDIA Corporation)**	UNITED STATES	ATIS
NXP Semiconductors Netherlands **(NXP Semiconductors Netherlands B.V.)**	NETHERLANDS	ETSI
NYCU **(National Yang Ming Chiao Tung University)**	TAIWAN, PROVINCE OF CHINA	ETSI
Odido **(Odido Netherlands B.V.)**	NETHERLANDS	ETSI
Ofcom (CH) **(Ofcom (CH))**	SWITZERLAND	ETSI
Ofcom (U.K.) **(Ofcom - Office of Communications (U.K.))**	UNITED KINGDOM	ETSI
Oki Electric Industry Co. Ltd.	JAPAN	TTC

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(OKi Electric Industry Co., Ltd)		
Omnispace **(Omnispace)**	UNITED STATES	ATIS
ONE Media 3.0 LLC **(ONE Media 3.0 LLC)**	UNITED STATES	ATIS
one2many B.V. **(one2many B.V.)**	NETHERLANDS	ETSI
OnePlus **(OnePlus (Shenzhen) Technology Co., LTD)**	CHINA	CCSA
OPPO **(Guangdong OPPO Mobile Telecommunications Corp.,Ltd.)**	CHINA	ETSI
OPPO (chongqing) Intelligence **(OPPO (chongqing) Intelligence Technology Limited)**	CHINA	CCSA
OPPO Beijing **(Beijing OPPO Telecommunications Corp., ltd.)**	CHINA	CCSA
OptM Media **(OptM Media Solutions Private Limited)**	INDIA	TSDSI
OQTEC **(OQ TECHNOLOGY)**	LUXEMBOURG	ETSI
Oracle Corporation **(Oracle Corporation)**	UNITED STATES	ETSI
Orange **(Orange)**	FRANCE	ETSI
Orange Romania **(Orange Romania)**	ROMANIA	ETSI
Orange Spain **(France Telecom España S.A.U.)**	SPAIN	ETSI
Orange UK **(Orange Brand Services Ltd)**	UNITED KINGDOM	ETSI
ORS **(Österreichische Rundfunksender GmbH & Co KG)**	AUSTRIA	ETSI
OTD_US **(OTD_US)**	UNITED STATES	ATIS
OTECH **(OTECH Germany GmbH)**	GERMANY	ETSI
P.I. WORKS **(P.I. WORKS TR BILISIM HIZMETLERI A.S.)**	TÜRKIYE	ETSI
Panasonic Holdings Corporation **(Panasonic Holdings Corporation)**	JAPAN	ARIB
PANASONIC R&D Center Germany **(PANASONIC R&D Center Germany GmbH)**	GERMANY	ETSI
PCCW Global B.V. **(PCCW Global B.V.)**	FRANCE	ETSI
Peking University **(Peking University)**	CHINA	CCSA
Pengcheng laboratory **(Pengcheng laboratory)**	CHINA	CCSA
Peraton Labs **(Peraton Labs)**	UNITED STATES	ATIS
Philips International B.V. **(Philips International B.V.)**	NETHERLANDS	ETSI
PHY Wireless **(PHY Wireless)**	UNITED STATES	ATIS
PIDS **(PIDS)**	NETHERLANDS	ETSI
Pivotal Commware **(Pivotal Commware)**	UNITED STATES	ATIS
Plan-S **(Plan S Uydu ve Uzay Teknolojileri A.S)**	TÜRKIYE	ETSI
PML **(Purple Mountain Laboratories: Networking, Communications and Security)**	CHINA	CCSA
Polaris Wireless **(Polaris Wireless)**	UNITED STATES	ATIS
Polisen **(Polismyndigheten)**	SWEDEN	ETSI

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POST Luxembourg **(POST Luxembourg)**	LUXEMBOURG	ETSI
Prasar Bharati **(Prasar Bharati)**	INDIA	TSDSI
Proximus Plc **(Proximus Plc)**	BELGIUM	ETSI
PSCE **(Public Safety Communication Europe Forum)**	BELGIUM	ETSI
PT PORTUGAL SGPS SA **(PT Portugal SGPS SA)**	PORTUGAL	ETSI
PTS **(Swedish Post and Telecom Authority)**	SWEDEN	ETSI
Public Safety Canada **(Public Safety Canada)**	CANADA	ETSI
Qihoo 360 **(Qihoo 360 Technology Co., Ltd.)**	CHINA	CCSA
Qorvo **(Qorvo)**	UNITED STATES	ETSI
Qualcomm Austria RFFE GmbH **(Qualcomm Austria RFFE GmbH)**	AUSTRIA	ETSI
QUALCOMM Europe Inc. - Italy **(QUALCOMM Europe Inc. - Italy Branch Office)**	ITALY	ETSI
QUALCOMM Europe Inc. - Spain **(QUALCOMM Europe Inc. - Spain Branch Office)**	SPAIN	ETSI
Qualcomm Finland RFFE Oy **(Qualcomm Finland RFFE Oy)**	FINLAND	ETSI
Qualcomm France **(Qualcomm France SARL)**	FRANCE	ETSI
Qualcomm Germany **(Qualcomm Germany GmbH)**	GERMANY	ETSI
Qualcomm Incorporated **(Qualcomm Incorporated)**	UNITED STATES	ATIS
Qualcomm India Pvt Ltd **(Qualcomm India Pvt Ltd)**	INDIA	TSDSI
QUALCOMM JAPAN LLC. **(QUALCOMM JAPAN LLC.)**	JAPAN	ARIB
Qualcomm Korea **(Qualcomm Korea)**	KOREA (REPUBLIC OF)	TTA
Qualcomm Tech. Netherlands B.V **(Qualcomm Technologies Netherlands B.V.)**	NETHERLANDS	ETSI
Qualcomm Technologies Int **(Qualcomm Technologies International, Ltd)**	UNITED KINGDOM	ETSI
Qualcomm Technologies Ireland **(QT Technologies Ireland Limited)**	IRELAND	ETSI
Quanray **(Shanghai Quanray Electronics Co., Ltd.)**	CHINA	CCSA
Quectel **(Quectel Wireless Solutions Co., Ltd.)**	CHINA	CCSA
RadiSys **(RadiSys Inc.)**	CANADA	ETSI
Rakuten Mobile, Inc **(Rakuten Mobile, Inc)**	JAPAN	ARIB
RATEL **(Regulatory Authority For Electronic Communications and Postal Services)**	SERBIA	ETSI
Reliance Jio **(Reliance Jio)**	INDIA	TSDSI
RICHTEK KOREA **(RICHTEK KOREA)**	KOREA (REPUBLIC OF)	TTA
RISE **(RISE Research Institutes of Sweden)**	SWEDEN	ETSI
ROBERT BOSCH GmbH **(ROBERT BOSCH GmbH)**	GERMANY	ETSI
Rogers Communications Canada **(Rogers Communications Canada Inc.)**	CANADA	ETSI
ROHDE & SCHWARZ	GERMANY	ETSI

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(ROHDE & SCHWARZ GmbH & Co.KG)		
Ruijie Network Co. Ltd **(Ruijie Network Co. Ltd)**	CHINA	CCSA
SAICT **(Shenzhen Academy of Information and Communication Technology)**	CHINA	CCSA
Samsung Electronics Co., Ltd **(Samsung Electronics Co., Ltd.)**	KOREA (REPUBLIC OF)	TTA
Samsung Electronics Czech **(Samsung Electronics Czech)**	CZECH REPUBLIC	ETSI
Samsung Electronics France SA **(Samsung Electronics France SA)**	FRANCE	ETSI
Samsung Electronics GmbH **(Samsung Electronics GmbH)**	GERMANY	ETSI
Samsung Electronics Iberia SA **(Samsung Electronics Iberia SA)**	SPAIN	ETSI
Samsung Electronics Nordic AB **(Samsung Electronics Nordic AB)**	SWEDEN	ETSI
Samsung Electronics Polska **(Samsung Electronics Polska)**	POLAND	ETSI
Samsung Guangzhou Mobile R&D **(Samsung Guangzhou Mobile R&D Center)**	CHINA	CCSA
Samsung Nanjing **(Samsung Electronic (China) R&D Center)**	CHINA	CCSA
Samsung R&D Institute India **(Samsung R&D Institute India - Bangalore Pvt. Ltd)**	INDIA	TSDSI
SAMSUNG R&D INSTITUTE JAPAN **(SAMSUNG R&D INSTITUTE JAPAN)**	JAPAN	ARIB
Samsung R&D Institute UK **(Samsung R&D Institute UK)**	UNITED KINGDOM	ETSI
Samsung Research America **(Samsung Research America)**	UNITED STATES	ATIS
Samsung Shenzhen **(Samsung Network R&D Center-Shenzhen)**	CHINA	CCSA
Sandvine Incorporated **(Sandvine Incorporated)**	CANADA	ETSI
Sanechips **(Sanechips Technology Co. , Ltd.)**	CHINA	CCSA
Sateliot **(Satelio IoT Services)**	SPAIN	ETSI
Schindler **(Schindler Elevator Ltd)**	SWITZERLAND	ETSI
SDI Squared **(SDI Squared LLC)**	UNITED STATES	ETSI
Sectra Communications AB **(Sectra Communications AB)**	SWEDEN	ETSI
Security Service **(Swedish Security Service)**	SWEDEN	ETSI
Semtech Neuchatel SA **(Semtech Neuchatel SA)**	SWITZERLAND	ETSI
Sennheiser Electronic GmbH **(Sennheiser Electronic GmbH & Co. KG)**	GERMANY	ETSI
Sensus UK **(Sensus UK Systems Limited)**	UNITED KINGDOM	ETSI
Sepura Ltd **(Sepura Limited)**	UNITED KINGDOM	ETSI
Sequans Communications **(Sequans Communications)**	FRANCE	ETSI
SES S.A. **(SES S.A.)**	LUXEMBOURG	ETSI
SETS **(Society for Electronic Transactions and Security)**	INDIA	TSDSI
SEU **(Southeast University)**	CHINA	CCSA
SGDSN **(Secrétariat Général de la Défense et de la Sécurité Nationale (SGDSN))**	FRANCE	ETSI

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SGITG **(State Grid Information & Telecommunication Group Co., Ltd.)**	CHINA	CCSA
SGS Wireless **(SGS Wireless)**	UNITED KINGDOM	ETSI
Shanghai Chen Si Electronics **(Shanghai Chen Si Electronics Technology Co., Ltd)**	CHINA	CCSA
Shanghai Jiao Tong University **(Shanghai Jiao Tong University)**	CHINA	CCSA
Shanghai Tejet Com Technology **(Shanghai Tejet Communications Technology Co., Ltd.)**	CHINA	CCSA
SHARP Corporation **(SHARP Corporation)**	JAPAN	ARIB
Shenzhen Heytap **(Shenzhen Heytap Technology Corp.,Ltd.)**	CHINA	CCSA
ShenZhen Zhongxing Shitong **(ShenZhen Zhongxing Shitong Tech. Co.,Ltd.)**	CHINA	CCSA
SIA **(Shenyang Institute of Automation, Chinese Academy of Sciences)**	CHINA	CCSA
Siemens AG **(Siemens AG)**	GERMANY	ETSI
Signalchip Innovations Pvt. **(Signalchip Innovations Pvt. Ltd.)**	INDIA	TSDSI
SIST **(Slovenian Institute for Standardisation)**	SLOVENIA	ETSI
Sisvel **(Sisvel International S.A.)**	LUXEMBOURG	ETSI
SK Telecom **(SK TELECOM)**	KOREA (REPUBLIC OF)	TTA
SKY Perfect JSAT Corporation **(SKY Perfect JSAT Corporation)**	JAPAN	ARIB
Skylo Technologies **(Skylo Technologies)**	UNITED STATES	ATIS
Skyworks Solutions Inc. **(Skyworks Solutions Inc.)**	UNITED STATES	ETSI
SmarterMicro Inc. **(Smarter Microelectronics(Guangzhou) Co.,Ltd)**	CHINA	CCSA
SnT - University of Luxembourg **(Interdisciplinary Centre for Security, Reliability and Trust/University of Luxembourg)**	LUXEMBOURG	ETSI
SoftBank Corp. **(SoftBank Corp.)**	JAPAN	ARIB
Softel Systems **(Softel Systems Pty Ltd)**	AUSTRALIA	ETSI
Softil Ltd **(Softil Ltd)**	ISRAEL	ETSI
Sony Corporation **(Sony Corporation)**	JAPAN	ARIB
Sony Europe B.V. **(Sony Europe B.V.)**	UNITED KINGDOM	ETSI
Sony Group Corporation **(Sony Group Corporation)**	JAPAN	ARIB
Sooktha Consulting Pvt Ltd **(Sooktha Consulting Pvt Ltd)**	INDIA	TSDSI
Southern Linc. **(Southern Linc.)**	UNITED STATES	ATIS
Southwest Jiaotong university **(Southwest Jiaotong university)**	CHINA	CCSA
SpaceX **(SpaceX Netherlands B.V)**	NETHERLANDS	ETSI
Spark NZ Ltd **(Spark NZ Ltd)**	NEW ZEALAND	ATIS
Spirent Communications **(Spirent Communications)**	UNITED STATES	ETSI
Sporton International Inc **(Sporton International Inc.)**	TAIWAN, PROVINCE OF CHINA	ETSI
Spreadtrum Communications	CHINA	CCSA

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(Spreadtrum Communications (Shanghai) Co., Ltd.)		
SRTC **(The State Radio_monitoring_center Testing Center)**	CHINA	CCSA
SS8 **(SS8 Networks Inc.)**	UNITED STATES	ETSI
SSNS **(Special Service for the National Security of Hungary)**	HUNGARY	ETSI
Starpoint **(Beijing Starpoint Technology Company Limited)**	CHINA	CCSA
STE IDIRECT IRELAND LTD **(ST ENGINEERING IDIRECT (IRELAND) LIMITED)**	IRELAND	ETSI
Stellar **(Stellar telecommunications)**	FRANCE	ETSI
STMicroelectronics **(STMicroelectronics International NV)**	SWITZERLAND	ETSI
Sumitomo Elec. Industries, Ltd **(Sumitomo Electric Industries, Ltd.)**	JAPAN	ARIB
SUTD **(Singapore University of Technology and Design)**	SINGAPORE	ETSI
Swift Navigation **(Swift Navigation)**	UNITED STATES	ATIS
SWISSCOM **(SWISSCOM SA)**	SWITZERLAND	ETSI
SWR **(Südwestrundfunk)**	GERMANY	ETSI
SyncTechno Inc. **(SyncTechno Inc.)**	KOREA (REPUBLIC OF)	TTA
Syniverse **(M/s Syniverse Technologies Services India Pvt. Ltd.)**	INDIA	TSDSI
TA **(Tantra Analyst)**	UNITED STATES	ETSI
Tait Europe Limited **(Tait Europe Limited)**	AUSTRIA	ETSI
Tata Elxsi Limited. **(Tata Elxsi Limited.)**	INDIA	TSDSI
TCL **(Shenzhen TCL New Technology Company Ltd.)**	CHINA	CCSA
TCS **(TATA Consultancy Services)**	INDIA	TSDSI
TD Tech Ltd **(TD Tech Ltd)**	CHINA	CCSA
TDF **(TDF SAS)**	FRANCE	ETSI
Tech Mahindra Limited **(Tech Mahindra Limited)**	INDIA	TSDSI
Tejas Network Limited **(Tejas Network Limited)**	INDIA	TSDSI
Tektronix GmbH **(Tektronix GmbH)**	GERMANY	ETSI
TELECOM ITALIA S.p.A. **(Telecom Italia S.p.A.)**	ITALY	ETSI
Telefonica Germany GmbH **(Telefónica Germany GmbH & Co OHG)**	GERMANY	ETSI
TELEFONICA S.A. **(TELEFONICA S.A.)**	SPAIN	ETSI
Telekom Deutschland GmbH **(Telekom Deutschland GmbH)**	GERMANY	ETSI
TELENOR ASA **(Telenor ASA)**	NORWAY	ETSI
Telesat International Limited **(Telesat International Limited)**	UNITED KINGDOM	ETSI
Telia Company AB **(Telia Company AB)**	SWEDEN	ETSI
Telit Communications S.p.A. **(Telit Communications S.p.A.)**	ITALY	ETSI

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Telstra Limited **(Telstra Limited)**	AUSTRALIA	ETSI
TELUS **(TELUS)**	CANADA	ATIS
Tencent **(Shenzhen city Tencent computer system Co. Ltd.)**	CHINA	CCSA
Tencent Cloud **(Tencent cloud computing Beijing Co., Ltd)**	CHINA	CCSA
Teradyne **(Teradyne)**	UNITED STATES	ATIS
TerreStar Solutions Inc. **(TerreStar Solutions Inc.)**	CANADA	ATIS
Texas A&M University **(Texas A&M University)**	UNITED STATES	ETSI
TEXAS Instruments **(Texas Instruments France)**	FRANCE	ETSI
THALES **(THALES)**	FRANCE	ETSI
THURAYA TELECOM CO. **(THURAYA TELECOMMUNICATIONS COMPANY)**	UNITED ARAB EMIRATES	ETSI
Tiami Networks **(Tiami Networks)**	UNITED STATES	ATIS
TII **(Technology Innovation Institute)**	UNITED ARAB EMIRATES	ETSI
T-Mobile Austria GmbH **(T-Mobile AUSTRIA GmbH)**	AUSTRIA	ETSI
T-Mobile Polska S.A. **(T-Mobile Polska Spolka Akcyjna)**	POLAND	ETSI
T-Mobile USA **(T-Mobile USA, Inc.)**	UNITED STATES	ETSI
T-Mobile USA Inc. **(T-Mobile USA Inc.)**	UNITED STATES	ATIS
TNO **(TNO)**	NETHERLANDS	ETSI
Tongji University **(Tongji University)**	CHINA	CCSA
Toshiba **(Toshiba)**	UNITED KINGDOM	ETSI
TOWE Wireless **(Sushi TOWE Wireless Testing (Shenzhen) Co.,Ltd.)**	CHINA	ETSI
TOYOTA Info Technology Center **(TOYOTA Info Technology Center USA, Inc.)**	UNITED STATES	ETSI
TOYOTA MOTOR CORPORATION **(TOYOTA MOTOR CORPORATION)**	JAPAN	TTC
TRAFICOM **(The Finnish Transport and Communications Agency)**	FINLAND	ETSI
Trafikverket **(Trafikverket)**	SWEDEN	ETSI
Transsion Holdings **(Transsion Holdings)**	CHINA	CCSA
TransUnion **(TransUnion)**	UNITED STATES	ATIS
Trimble **(Trimble)**	UNITED STATES	ATIS
Tron Future Tech Inc. **(Tron Future Tech Inc.)**	TAIWAN, PROVINCE OF CHINA	ETSI
TTP plc **(TTP plc)**	UNITED KINGDOM	ETSI
Turk Telekomunikasyon A.S. **(Turk Telekomunikasyon A.S.)**	TÜRKIYE	ETSI
TURKCELL **(Turkcell Iletisim Hizmetleri A.S.)**	TÜRKIYE	ETSI
U.S. Department of Defense **(U.S. Department of Defense)**	UNITED STATES	ATIS
U.S. Department of Transport.	UNITED STATES	ATIS

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(U.S. Department of Transportation)		
U.S. National Security Agency **(US National Security Agency)**	UNITED STATES	ATIS
Uangel **(Uangel Corporation)**	KOREA (REPUBLIC OF)	TTA
ubinexus **(Beijing Ubinexus Technology Development Co., Ltd)**	CHINA	CCSA
u-blox AG **(u-blox AG)**	SWITZERLAND	ETSI
UESTC **(University of Electronic Science and Technology of China)**	CHINA	CCSA
UL VS Ltd **(UL VS Ltd)**	UNITED KINGDOM	ETSI
UMA **(Universidad de Malaga)**	SPAIN	ETSI
umlaut **(umlaut communications GmbH)**	GERMANY	ETSI
UNIBO **(ALMA MATER STUDIORUM Università di Bologna)**	ITALY	ETSI
UniBw M **(University of the Bundeswehr Munich)**	GERMANY	ETSI
Unicom Broadband Online **(Unicom Broadband Online Co., Ltd.)**	CHINA	CCSA
Unicompay **(Unicompay Co., Ltd.)**	CHINA	CCSA
Union Inter. Chemins de Fer **(Union Internationale des Chemins de Fer)**	FRANCE	ETSI
Union Telephone Company **(Union Telephone Company)**	UNITED STATES	ATIS
Unisoc **(Unisoc (Shanghai) Technologies Co., Ltd.)**	CHINA	CCSA
Unisoc Beijing **(Beijing Unisoc Communications Technology Co., Ltd.)**	CHINA	CCSA
UPV/EHU **(Universidad del País Vasco/Euskal Herriko Unibertsitatea)**	SPAIN	ETSI
US Cellular Corporation. **(US Cellular Corporation/TDS.)**	UNITED STATES	ATIS
UTIMACO TS GmbH **(UTIMACO TS GmbH)**	GERMANY	ETSI
UTokyo **(The University of Tokyo)**	JAPAN	ETSI
Vaan Megam **(Vaan Megam Networks)**	INDIA	TSDSI
Valeo **(Valeo Telematik und Akustik GmbH)**	GERMANY	ETSI
VALID SOLUCIONES TECNOLÓGICAS **(VALID SOLUCIONES TECNOLÓGICAS S.A.U)**	SPAIN	ETSI
Valid8 **(Valid8.com, Inc.)**	UNITED STATES	ETSI
Vanchip **(Vanchip (Tianjin) Technology Co., Ltd.)**	CHINA	CCSA
Verizon Denmark **(Verizon Denmark A/S)**	DENMARK	ETSI
Verizon Spain **(Verizon Spain S.L.)**	SPAIN	ETSI
Verizon Sweden **(Verizon Sweden Aktiebolag 2116)**	SWEDEN	ETSI
Verizon Switzerland AG **(Verizon Switzerland AG)**	SWITZERLAND	ETSI
Verizon UK Ltd **(Verizon UK Ltd)**	UNITED KINGDOM	ETSI
Vestel **(Vestel Elektronik Sanayi ve Ticaret A.S)**	TÜRKIYE	ETSI
ViaSat Satellite Holdings Ltd **(ViaSat Satellite Holdings Ltd)**	UNITED KINGDOM	ETSI

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VIAVI Solutions **(Viavi Solutions UK Ltd.)**	UNITED KINGDOM	ETSI
vivo Mobile Com. (Chongqing) **(vivo Mobile Communication (Chongqing) Co., Ltd)**	CHINA	CCSA
vivo Mobile Communication (H) **(vivo Mobile Communication (Hangzhou) Co., Ltd.)**	CHINA	CCSA
vivo Mobile Communication (S) **(vivo Mobile Communication (Shenzhen) Co., Ltd.)**	CHINA	CCSA
vivo Mobile Communication Co., **(vivo Mobile Communication Co., Ltd)**	CHINA	CCSA
VIVO TECH GmbH **(VIVO TECH GmbH)**	GERMANY	ETSI
Vodafone GmbH **(Vodafone GmbH)**	GERMANY	ETSI
VODAFONE Group Plc **(Vodafone Group Plc)**	UNITED KINGDOM	ETSI
Vodafone Ireland Plc **(Vodafone Ireland Plc)**	IRELAND	ETSI
Vodafone Italia SpA **(Vodafone Italia SpA)**	ITALY	ETSI
Vodafone Romania S.A. **(Vodafone Romania S.A.)**	ROMANIA	ETSI
Vodafone Telekomünikasyon A.S. **(Vodafone Telekomünikasyon A.S.)**	TÜRKIYE	ETSI
VoiceAge Corporation **(VoiceAge Corporation)**	CANADA	ETSI
Volkswagen AG **(Volkswagen AG)**	GERMANY	ETSI
VSENS **(Unicom Vsens Telecommunications Co., Ltd)**	CHINA	CCSA
VTT **(VTT Technical Research Centre of Finland)**	FINLAND	ETSI
WE Certification Oy **(WE Certification Oy)**	FINLAND	ETSI
Wiliot Ltd. **(Wiliot Ltd.)**	ISRAEL	ETSI
WILUS Inc. **(WILUS Inc.)**	KOREA (REPUBLIC OF)	TTA
Wipro GE **(Wipro GE Healthcare Private Limited)**	INDIA	TSDSI
Wisig Networks Pvt Ltd **(Wisig Networks Pvt Ltd)**	INDIA	TSDSI
Wuhan CICT Mobile **(Wuhan CICT Mobile Communications Technology Co., Ltd.)**	CHINA	CCSA
Wuhan Hongxin Technical **(Wuhan Hongxin Technical Services Co., Ltd.)**	CHINA	CCSA
Wuhan Hongxin Technology **(Wuhan Hongxin Technology Development Co., Ltd.)**	CHINA	CCSA
Xiaomi Communications **(Xiaomi Communications)**	CHINA	CCSA
Xiaomi EV Technology **(Xiaomi EV Technology Co., Ltd.)**	CHINA	CCSA
Xiaomi Technology **(Xiaomi Technology)**	CHINA	CCSA
Xidian University **(Xidian University)**	CHINA	CCSA
Xilinx Ireland **(Xilinx Ireland)**	IRELAND	ETSI
Zhejiang Lab **(Zhejiang Lab)**	CHINA	CCSA
Zhejiang University **(Zhejiang University)**	CHINA	CCSA
ZITiS **(Central Office for Information Technology in the Security Sector)**	GERMANY	ETSI
Zollkriminalamt (ZKA)	GERMANY	ETSI

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(Zollkriminalamt (ZKA))		
ZONSON **(ZONSON SAMRT AUTO CORPORATION)**	CHINA	CCSA
ZTE **(ZTE Telecom India Pvt Ltd)**	INDIA	TSDSI
ZTE Corporation **(ZTE Corporation)**	CHINA	CCSA
ZTE Corporation **(ZTE Corporation)**	CHINA	ETSI
ZTE FRANCE SASU **(ZTE FRANCE SASU)**	FRANCE	ETSI
ZTE Italia **(ZTE Italia S.R.L)**	ITALY	ETSI
ZTE JAPAN K.K. **(ZTE JAPAN K.K..)**	JAPAN	TTC
ZTE Japan K.K. **(ZTE Japan K.K.)**	JAPAN	ARIB
ZTE Korea Limited **(ZTE Korea Limited)**	KOREA (REPUBLIC OF)	TTA
ZTE Photonics **(ZTE Photonics Technology Co.,Ltd.)**	CHINA	CCSA
ZXNE **(ZXNE CORPORATION)**	CHINA	CCSA

Total : 781 Individual Members

Any comments or problems with this application? Please let us know...

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Appendix 10

The Wayback Machine - https://web.archive.org/web/20140711055422/http://3gpp.org/about-3gpp/5-faq

The Mobile Broadband Standard



FAQ

FAQ

Table of contents

- Who can become an Individual Member of 3GPP and how much does it cost?
- Who may participate in 3GPP meetings?
- Who shall fill in the 3GPP Individual Member Application form?
- What shall I do if a 3GPP company or official contact details change?
- Different membership categories?
- Who may become an observer?
- Who may become a Guest Member and do guests have to pay any fees?
- Who can apply for market representative Partnership?
- Can an ETSI Observer become an Individual Member of 3GPP?
- Can an ETSI Applicant apply for 3GPP Membership?
- Can an ETSI Member apply for 3GPP Guest status?
- Are there discussion archives for the 3GPP exploder lists?
- How do I subscribe to the 3GPP exploder lists?
- What is the 3GPP IPR Policy?
- What is the 3GPP policy on licensing?
- What is the 3G Patent Platform?
- Is it true that a number 3GPP members are looking at setting up a patents cooperative, with (...)
- Who owns the Technical Specifications and the Technical Reports approved by (...)
- Does a company implementing a product based on the 3GPP specifications have to pay any (...)
- Are meeting contributions to ETSI TC SMG publically available?
- Is permission needed to use the 3GPP logo in marketing collaterals or on a web (...)
- Can I use computer code included with a 3GPP TS to implement a product?
- Where can the rules, protocols or software needed to develop applications for UMTS be (...)
- What is the correlation between Stage 1, Stage 2 (GSM 3.90 and GSM 02.90) and Phase 1, Phase (...)
- Is there any simple guide to the different CAMEL specifications?
- Where are the specifications which identify the Vcc voltages for the SIM interface?
- Are the 3GPP specifications produced only in word?
- Which group works with specifications covering the use of the GSM codec (either in C or Java (...)
- Does the ETSI GSM standard document collection also include GSM standard documents produced by (...)
- Where would I find a document (e.g. UMTS 30.03 version 3.1.0) which does not appear on the (...)
- Where are all the Change Requests (CRs) located?
- Where are all the current ETSI SMG specs located?
- Which group works on the W-CDMA and the Physical Layer of W-CDMA?
- Where can I find the list of Abstract syntax notation (ASN.1) object identifiers?
- Where can I find the 3GPP Confidentiality and Integrity algorithms?
- What is a Release - how does specification version numbering work?
- Where can I find information on the current status of 3GPP specifications?
- What is the system for numbering specifications? Which specifications contain information on (...)
- Who are the TSG/WG Officials and Support team and Where can I find their contact (...)
- Where can I find the Terms of Reference for my TSG/WG?
- When did the Officials begin their Term of Office?
- May I become an Official?
- Where are my TSG/WGs documents stored?
- Is the ETSI Secretariat responsible for the management of the Application Provider Codes for (...)
- How do I register for a meeting?
- How do I submit a contribution for a meeting?
- How do I obtain a document number for my contribution?
- Where can I download documents for an upcoming meeting?
- Where can I find a temporary document template?
- What happens if I am unable to attend a meeting?
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- Can I write an 3GPP Document myself?
- Do I and my company have to support my TSG/WGs Work Items?
- How do I resolve the problem with the corrupt file warning in MSWord. Note that this only (...)
- Do I need a password and user name to access the 3GPP Web site ?
- Can you give me information about which companies manufacture particular types of equipment. (...)

Search

3GPP Website: Search for...

Search and download specs, docs, CRs and more from the 3GPP FTP Server:

ADVANCED FTP SEARCH

Latest Video

3GPP Charity Run 2014

from 3GPPlive PLUS



News Feeds

- 3GPP News
- 3GPP tweets

Statistics

12194 average visitors per day

143 people currently on the site

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Where can I find a list of technical terms and abbreviations used in 3GPP documents?
What is the difference between a SIM and a USIM? What is a UICC?
What is an R-UIM?
I have transferred a movie file from my phone to my PC. Where can I find a player for 3gp (...)
What formalities do I have to go through to get type approval for terminal equipment in (...)
Where can I find the specification of the SIM Lock feature?
Is it possible to determine the date and time of publication of a particular version of a 3GPP (...)

Membership

Who can become an Individual Member of 3GPP and how much does it cost?

Individual Members are by definition members of the Organizational Partners of 3GPP. This means that members of standardization bodies such as ETSI, ARIB, TTA, TTC, ATIS and CCSA have a right to take part in 3GPP. If your company becomes an ETSI member, please be informed that for participation in 3GPP you need to pay 3 units of contribution as a minimum except SMEs, Users, Universities, Public Research Bodies who should pay 2 units (instead of 1). If you determine 2 units for your company based on ICT business turnover, you have to add another unit of contribution. If you require further guidance on how to participate in 3GPP activities you should contact 3GPP Membership

Who may participate in 3GPP meetings?

To attend a 3GPP meeting, you must be a 3GPP Individual Member (i.e. you must be a Member of one of the Organizational Partners involved in the project; ARIB, CCSA, ETSI, ATIS, TTA or TTC. A non-member company should seek membership with one of the above partners to be eligible to contribute and participate at 3GPP Meetings.

Who shall fill in the 3GPP Individual Member Application form?

The person legally responsible for the requesting company shall fill in the form.

What shall I do if a 3GPP company or official contact details change?

All changes of correspondence should be notified to 3GPPMembership

Different membership categories?

The different membership categories of 3GPP are described in Section B of the 3GPP Working Procedures Look here>>>.

Who may become an observer?

The status of Observer may be granted by the Organizational Partners to an entity which has the qualifications to become a future Partner.

Who may become a Guest Member and do guests have to pay any fees?

The Guest Status is for potential Individual Members who may be granted permission to participate in 3GPP for a maximum period of 6 months. Guest status is granted on a case-by-case basis by the Organizational Partners (see also 3GPP Working Procedures Article 10). If you like to apply for a Guest status, please complete the on-line 3GPP Application form.

IMPORTANT NOTICE: The online application form for 3GPP Individual membership and 3GPP guest status is under construction, therefore please send any request for membership to 3GPPmembership@etsi.org

No membership fees are requested for Guest applications.

Who can apply for market representative Partnership?

Organisation who have the ability to offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements (e.g.,services, features and functionality) falling within the 3GPP scope (see also 3GPP Working Procedures, Article 7 and Annex E) .

Can an ETSI Observer become an Individual Member of 3GPP?

No, an ETSI Observer may "observe" all activities, but their participation is limited to the ETSI General Assembly only. Therefore, ETSI Observers have no participation rights in 3GPP. ETSI Observers have access to ETSI documentation and of course to 3GPP documentation since that is openly published on the web.

3GPP does have it's own category called "Observer" but that is entirely different and is used for potential Partners.

Can an ETSI Applicant apply for 3GPP Membership?

YES, an Applicant means that your request to become an ETSI Member will be addressed (and normally approved) at the next General Assembly and that the company has specified they want to participate in 3GPP activities. See also above regarding 3GPP fees.

Can an ETSI Member apply for 3GPP Guest status?

Yes, any ETSI Member who pays 1 or 2 Units of Contribution are eligible for 3GPP Guest status.

3GPP email exploder lists

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Are there discussion archives for the 3GPP exploder lists?

Home page of listserv

Then, just follow the links to the archives. For example, the archives for the main RAN email list

How do I subscribe to the 3GPP exploder lists?

follow the instructions found >>>here

Legal Matters

What is the 3GPP IPR Policy?

The 3GPP Organizational Partners have agreed that their IPR policies should be respected and that their respective members should be encouraged to declare "their willingness to grant licenses on fair reasonable terms and conditions and on non discriminatory basis" (Article 3.1 of the Third Generation Partnership Project). For more information look **Here**

The above-mentioned principles are further reflected in Article 55 of the 3GPP Technical Working Procedures which request that each Individual Members should declare "at the earliest opportunity, any IPR which they believe to be essential, or potentially essential, to any work ongoing within 3GPP".

What is the 3GPP policy on licensing?

Some aspects of 3GPP systems are covered by essential Intellectual Property Rights (IPR) - that is, patented technologies without which equipment cannot be implemented. The IPR vests in - i.e. the patents are held by - individual companies, and not by 3GPP itself or any of its Organizational Partners (OPs). All Individual Members of 3GPP abide by the IPR policies of the OP to which they belong; all such policies are broadly similar see also "What is the 3GPP IPR Policy", and require IPR holders to make licences available to all third parties, whether or not they are 3GPP Individual Members, under fair, reasonable and non-discriminatory (FRAND) terms.

Neither 3GPP nor its component OPs offer an IPR search service. It is the responsibility of each manufacturer / system implementor to seek and obtain its own licences from the individual IPR holders.

For more information, and a guide to the IPRs declared to each 3GPP OP, look here>>>

(Answer drafted 2005-09-12 by JMM.)

What is the 3G Patent Platform?

On the fringe of standardization activities some telecom companies have set up a voluntary arrangement for the licensing of essential patents required to meet the standards published for 3G systems has emerged.

Please find a historical recap of the creation of the 3G Patent Platform. Thank you to note that Phase 3 has not started yet.

1. Discussions started in the UMTS IPR working Group (1998).

2. The UMTS IPR working group operated within the UIAP (UMTS Intellectual Property Association) to define the functions of the 3G Patent Platform.

The 3G Patent Platform will provide services for:

Evaluating,
Certifying and,
Licensing

essential patents for 3G Mobile communications.

3. Implementation of the 3G Patent Platform scheme.

The 3G Patent Platform will operate within a new profit service company governed by the members (essential patent holders and licensees). As of today this NEW CO is not operational since it is waiting for the approval of the US/EC/Japanese competition law authorities in order to launch the above-described activities.

More information...

Is it true that a number 3GPP members are looking at setting up a patents cooperative, with the aim of reducing the royalties they pay each other for the use of patented technology in third-generation mobile systems?

1. Discussion started in the UMTS IPR working Group (1998),
2. Creation of the UIAP (UMTS Intellectual Property Association) which has performed the function of the definition the 3G Patent Platform scheme (Evaluation of a patent, certification of essentiality, licensing arrangements, etc.) and which is the legal owner of the 3G Patent Platform Specification.
3. Implementation of the scheme:

As of today NEW CO (implementing the 3G Patent Platform) has not be incorporated and the Patent Platform scheme is not operational as it is awaiting for the approval of the US/EC competition law authorities.

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ETSI follows the development of the 3G Patent Platform but, as a neutral standard body, cannot take an active participation in this market initiative.

Who owns the Technical Specifications and the Technical Reports approved by 3GPP?

According to the Article 3.2.2 of the Third Generation Partnership Project Agreement, the 3GPP Organizational Partners jointly own copyright on the Technical Specifications and the Technical Reports approved by 3GPP.

Does a company implementing a product based on the 3GPP specifications have to pay any royalties to the 3GPP organization?

The Third Generation Partnership Project is not a legal entity but a Partnership Project between different standardization organizations in the field of telecommunications.

Are meeting contributions to ETSI TC SMG publically available?

The GSM standardization work was transferred from CEPT to ETSI in 1991. TC SMG was closed at meeting #32 and TC SMG created to continue the work. Like almost all ETSI Technical Committees, participation in TC SMG and its working groups was open to all ETSI member organizations. That is, any bona fide representative of an ETSI member was free to participate. Exceptionally, other individuals could participate **by express invitation of the chairman**. Each meeting report contains a list of participants with their corporate affiliations.

Until the late 1990s, all meeting documents were circulated in paper form. Electronic files started to take over from paper in around 1997. Meeting documents ("TDocs") were distributed by post (later, by fax) in batches prior to the meeting, to those persons registered as regular participants in SMG or the appropriate working group, and many more documents were produced during the course of the meeting itself. Although a provision existed (and still exists) in the context of the IPR Policy for contributors to place restrictions on the distribution of TDocs via a formal notification at the time the document was provided, this was seldom if ever invoked. In the absence of such a condition, all TDocs were free of any restriction on subsequent distribution. Thus no restriction has ever been placed on how meeting participants dispose of the documents subsequent to their distribution before, during, or after the meeting. There were no non-disclosure agreements.

ETSI maintains a paper archive of the SMG TDocs, and bona fide representatives of current ETSI members can, by appointment, make an accompanied search of the archives. This facility extends to members which may not have been members at the time the document was originally produced.

TC-approved versions of ETSI “deliverables” (see ETSI Directives for formal definition of this term) would have been transferred by the support officer of the committee to the secretariat team responsible for publishing ETSI deliverables. That team would have made cosmetic (non-technical) modifications to the draft deliverables before issuing them. Depending on the type of “deliverable”, those documents would have been issued via National Standards Organizations (NSOs) either for immediate publication, or first via either a one-step or two-step national public enquiry and vote process prior to final publication by ETSI. In ETSI parlance, “publication” of a deliverable is the final step in the development cycle of a technical standard, and has a precise meaning. That meaning is not “making publically available”, since draft deliverables released for public enquiry or for vote are "publically available" but not yet "published".

If the confidentiality conditions described above had been imposed on a TDoc by its authors, if the text of that TDoc was in due course incorporated into an ETSI "deliverable", then those conditions are regarded as anulled from the date on which the deliverable is published.

Collections of TDocs / meeting reports have from time to time been made available **to ETSI members** in CD or DVD form.

Is permission needed to use the 3GPP logo in marketing collaterals or on a web site?

ETSI (European Telecommunications Standards Institute) is the sole owner of the following acronyms:

ETSI,
DECT,
UMTS,
3GPP and
TIPHON,

as well as the ETSI, TIPHON and 3GPP logos. ETSI Members shall use these Trade Marks in accordance with Collective Letter 1943. Authorization is needed to use the above mentioned acronyms and logos.

For further information contact the ETSI Legal Team.

Can I use computer code included with a 3GPP TS to implement a product?

Yes. Some 3GPP Technical Specifications include computer code such as ASN.1 or XML (protocols), C language (codecs), ...; and some include test patterns (codecs) for verifying implementations. These are published to allow users of these TSs to implement real-world products. No permission is required from 3GPP or its Organizational Partners (OPs) to use this code in the design of products - e.g. to compile the C to implement a codec in machine code.

Nevertheless, there may be essential IPR involved with such a design, and implementors are obliged to seek licences to use that technology. See also **What is the 3GPP policy on licensing ?**
Moreover, the copyright of all 3GPP TSs and TRs vests jointly by all the 3GPP OPs. Other than for in-house copies for the purpose of further development of the 3GPP standard or for product design purposes, etc. you may not reproduce any part of a

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3GPP TS or TR without seeking permission: use the form available here. This means that you must not provide verbatim copies of source code (or lightly modified copies) without seeking permission from 3GPP.

Finally, you are reminded that 3GPP TSs and TRs have no legal status, and you should not design products directly to them. See the advice notice on the cover page of every 3GPP TS and TR. Instead, use the technically identical publication of one of the OPs.

Specifications

Where can the rules, protocols or software needed to develop applications for UMTS be found?

A good place to start is on the 3GPP website, and particularly the specifications list.

Look at the titles of the specs for those which are appropriate. Perhaps 21.111, 31.102 and 31.111 might be relevant.

What is the correlation between Stage 1, Stage 2 (GSM 3.90 and GSM 02.90) and Phase 1, Phase 2?

The "stage" nomenclature was an ancient CCITT invention, related to ISDN standardisation. "Stage 1" refers to the service description from a service-user's point of view. "Stage 2" is a logical analysis, breaking the problem down into functional elements and the information flows amongst them. "Stage 3" is the concrete implementation of the protocols between physical elements onto which the functional elements have been mapped.

Is there any simple guide to the different CAMEL specifications?

Unfortunately there is no single document acting as a guide to the CAMEL standards. Initial plans were published in ETSI ETR 244 in 1995, though this is so old as to be more or less useless now. GSM 10.78 is the CAMEL project plan, and this is probably the best thing. This may have been available as a temp doc to SMG meeting no. 25, but is still only in draft form, and has never been made publicly available.

In the SS7 arena,

GSM 02.78 / UMTS 22.078 is the Stage 1 (requirements) document.
GSM 03.78 / UMTS 23.078 is the Stage 2 (functions, conceptual data flow)
GSM 09.78 / UMTS 29.078 is the Stage 3 (protocol) - CAMEL Application Part (CAP)
CAP has been released in several phases:

Release 1996 = Phase 1
Release 1997 = Phase 2
Release 1998 = Phase 2
Release 1999 = Phase 3 (GSM and UMTS common spec)

For UMTS, 21.978 is a feasibility study on CAMEL control of Voice over IP.

In the Intelligent Network area, CAMEL is an extension of Core INAP, under the control of ETSI SPAN3 (formerly SPS3) - ignore for simplicity the Stage 1 and Stage 2 specifications, which were under ETSI SPAN6 (formerly NA6). Core INAP was released in sevaral phases:

CS1 = ETS 300 374 series,
CS2 = EN 301 140 series,
CS3 = EN 301 931 series.

It had originally been intended to split CS3 into two releases, and also to produce a CS4. These plans now seem to be on hold. Tthe ETSI phasing of the various Capability Sets was not strictly aligned with the ITU-T "equivalents", and this was a source of some confusion. For further information on SPAN please contact : spansupport@etsi.org Very recently, SPAN has been reorganised, and SPAN3's work is now to be found within SPAN12.

IN CAMEL phase 1 is an enhancement of Core INAP CS1. The protocol is defined in the ETSI EN 301 152 series, which is a "delta" to ETS 300 374, and assumes a CAP according to GSM 09.78 v5.5.x (Phase 2+, Release 1996). IN CS3 includes CAMEL aspects (which were ignored for IN CS2).

Where are the specifications which identify the Vcc voltages for the SIM interface?

3V and 1.8 V SIMs for GSM are specified in GSM 11.12 (phase 2) and GSM 11.18 (release 98) respectively.
However, in 3GPP we have developed a new specification (3G TS 31.101) which combines the physical/electrical/logical aspects of GSM 11.11, GSM 11.12 and GSM 11.18 into a single specification. The electrical and physical aspects have not really been changed compared to the GSM specification mentioned above (the logical and security aspects have been enhanced). It is recommended that you use this new specification as the basis for any new work.

Are the 3GPP specifications produced only in word?

The 3GPP specs are published as ETSI deliverables, and these are available in PDF from http://pda.etsi.org/pda/queryform.asp. But you can download a free Word viewer (ie read only) from the Microsoft web site. PDF is inherently secure (more so than html, in fact), and because WordViewer is very simple (it can not handle macros, for example), it is pretty safe too.

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ETSI has no plans at present to publish specifications in plain text or in html.

Which group works with specifications covering the use of the GSM codec (either in C or Java based)?

The SMG11 and 3GPP SA4 specifications available from http://www.3gpp.org respectively deal with this. It gives you a list of specifications via the status list (look for the GSM specs in the MS-Access database at :
and you can then download the specs you need. If you do not have an ETSI EOL account, you can download the ETSI equivalent standards from http://pda.etsi.org/pda/queryform.asp.

Does the ETSI GSM standard document collection also include GSM standard documents produced by the GSM Association and exactly what kind of GSM standards does ETSI produce?

The GSM specifications were originally started in committee GSM of CEPT. There (as "CEPT Recommendations") they were allocated a reference number of the form nn.nn, for example GSM 06.12. Even after transfer to ETSI about ten years ago, the GSM community (in Technical Committee SMG) continue to use these spec identifiers.

The specifications are grouped into 'Releases'. The original specifications were published by ETSI in 1994 and are now known as 'Phase 1'. The next release was known as 'Phase 2', and the next one as ... 'Phase 2+'. Within Phase 2+, there have been annual releases since 1996, which are known as R96, R97, R98 and R99. You can find the specifications on the SMG file server http://docbox.etsi.org/zArchive/SMG/ grouped into directories by Release. (You need an account on the ETSI server to have access to this directory.) Looking at a spec, you can tell which release it belongs to by the version number:

Version release:

- 3.x.x Phase 1
- 4.x.x Phase 2
- 5.x.x Phase 2+, R96
- 6.x.x Phase 2+, R97
- 7.x.x Phase 2+, R98
- 8.x.x Phase 2+, R99

There will (probably) not be a Release 2000, since the work has been subsumed by the third generation specifications under 3GPP.

All (nearly) the specs of all releases are published as ETSI deliverables, and most have undergone several revisions in each release. In order to match a GSM spec number and version with the corresponding ETSI deliverable, you should go to http://webapp.etsi.org/key/queryform.asp.

Where would I find a document (e.g. UMTS 30.03 version 3.1.0) which does not appear on the 3GPP Status List?

Look at http://docbox.etsi.org/tech-org/smg/Document/smg/specs/UMTS/3003_320.zip but, an ETSI server account is needed to access this. It is a document stemming from the initial TC-SMG studies on UMTS, not a product of 3GPP. It was, in fact, published as an ETSI deliverable, TR 101 112, and this may be downloaded via http://pda.etsi.org/pda/queryform.asp.

In general, the cross-referencing between GSM and ETSI deliverables, and between 3GPP and ETSI deliverables may be found at http://webapp.etsi.org/key/queryform.asp

Where are all the Change Requests (CRs) located?

The information on CRs is available via the 3GPP website.

The information is classed by series so it is very easy to locate the particular specification which interests you.

If, for example, you are looking for CRs on GSM 08.18 then you would use this link:

http://www.3gpp.org/ftp/Specs/html-info/0818-CRs.htm

Where are all the current ETSI SMG specs located?

All the archives for the GSM documentation

An ETSI On-Line account is needed to access these documents. You can apply for an ETSI online account.

In general, the cross-referencing between GSM and ETSI deliverables, and between 3GPP and ETSI deliverables may be found here.

Which group works on the W-CDMA and the Physical Layer of W-CDMA?

The radio aspects are standardised in TSG-RAN. The technical work is done in the 4 Working Groups of RAN (WG1 radio layer 1, WG2 radio layer 2/3, WG3 interfaces, WG4 RF measurements). I'd say you are interested in TSG-RAN WG1 then. Their specifications are numbered 25.2xx.

The temporary documents (meeting documents etc.) of WG1 are stored on ftp://ftp.3gpp.org/TSG_RAN/WG1_RL1 and the latest specifications (December 99) are or will be provided on ftp://ftp.3gpp.org/Specs/December_99/25_series.

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Where can I find the list of Abstract syntax notation (ASN.1) object identifiers?

The expandable list of object identifiers is available here >>>. To see the formal definition of the object identifiers, see the document cited on the right. The tree is not necessarily complete; further extensions may be included in the referenced document. For more information look here >>>

Where can I find the 3GPP Confidentiality and Integrity algorithms?

The 3GPP Confidentiality and Integrity algorithms F8 & F9 (KASUMI) have been developed through the collaborative efforts of the 3GPP Organizational Partners. For more information and in order to download the algorithms look here >>>

What is a Release - how does specification version numbering work?

To meet new market requirements, 3GPP specifications are continually being enhanced with new features. In order to provide developers with a stable platform for implementation while at the same time allowing the addition of new features, the 3GPP uses a system of parallel "releases". For more information look here >>>

Where can I find information on the current status of 3GPP specifications?

New versions of many 3GPP specifications are made available shortly after the 3GPP TSG plenary meetings which take place four times a year (March, June, September and December). In order to identify what the current version is or and how to find information about older versions of specifications look here >>>.

What is the system for numbering specifications? Which specifications contain information on specific topics?

All 3G and GSM specifications have a 3GPP specification number consisting of 4 or 5 digits. (e.g. 09.02 or 29.002). For a more complete description and examples look here >>>

Technical Specification Group/Working Group

Who are the TSG/WG Officials and Support team and Where can I find their contact details?

Each TSG/WG has a Chairman, up to two Vice-Chairmen (three Vice-Chairmen) in the case of TSGs), a secretary and a member of the support team. From the 3GPP structural organization page, click on the TSG or WG of interest to reach its home page. From there, click on the "List of elected officials" entry in the table.

Where can I find the Terms of Reference for my TSG/WG?

The current Terms of Reference for each TSG/WG appear on the web pages of each TSG/WG.

When did the Officials begin their Term of Office?

The four Technical Specification Groups (TSGs) have elected their 3GPP TSG officials at the Fort Lauderdale (FL) meeting in March.

The meeting reports for each TSG/WG will indicate the election/re-election/resignation of an official. A complete list of TSG/WG officials is available on the 3GPP web site.

May I become an Official?

The TSG Chairman and Vice Chairmen are elected by the Technical Specification Group from amongst the Individual Member representatives. Each TSG can elect a maximum of two Vice Chairmen. Once elected, these candidates are proposed to the PCG for appointment.

The Working Group Chairman and Vice Chairmen are elected by the Working Group from amongst the Individual Member representatives. Each Working Group can elect a maximum of two Vice Chairmen.

A candidate for TSG or Working Group election shall provide a letter of support from his Organization and nominations may be made up to the point when an election takes place.

The TSG Chairman and Vice-Chairmen shall be appointed by the PCG on the proposal of the TSG.

The Chairman and the Vice-Chairmen shall be appointed for a two year term of office. The Chairman and Vice-Chairmen may be appointed for one further consecutive term. If, at the end of a Chairman or Vice Chairmans second term, no other candidates are available, the Chairman or Vice Chairmen may be appointed for a further term.

Chairman and Vice Chairmen should not be from the same region, Organizational Partner, or from the same group of companies, unless no other candidate is available.

Successive Chairmen should not be from the same Organizational Partner, the same region or from the same group of companies, unless no other candidate is available

Where are my TSG/WGs documents stored?

Each TSG/WG has a specific area allocated on the 3GPP ftp server.

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Is the ETSI Secretariat responsible for the management of the Application Provider Codes for 3GPP ?

The ETSI secretariat does not actually allocate these number - unique number are obtained by the coding scheme that is defined in 31.110. Application identifiers for consist of two parts - a RID and a PIX.

The RID is simple: ISO/IEC have allocated the number 'A000000087' to the 3GPP. This was allocated to ETSI on behalf of the 3GPP.

The coding of the PIX is specified in annex B of 31.110. There are three different sorts of PIX:

- 3G UICC,
- 3G USIM, and
- 3G USIM toolkit

Each of these requires the use of the "Card issuer code" as defined in ITU-T recommendation E.118 [3]. This is a unique code given to each card issuer (for example, each GSM operator in the world has requested a card issuer code). So, any 3G operator that does not have a 2G system that uses SIMs will have to apply to the ITU-T in accordance with the procedures in E.118.

Documents and TSG/WG Meetings

How do I register for a meeting?

If you are a TSG/WG member you will receive information about forthcoming meetings via the e-mail exploder. This will indicate the path on the ftp server where the invitation and related documents may be found. You may also consult the Meetings area on the 3GPP Web where the latest invitations of each TSG/WG are stored together with the calendar of meetings.

How do I submit a contribution for a meeting?

Each meeting invitation will contain details of how to register contributions for that meeting and who to send your contributions to.

How do I obtain a document number for my contribution?

Each meeting invitation will contain details of how to register contributions for that meeting and who to send your contributions to.

Where can I download documents for an upcoming meeting?

Each meeting invitation will contain details of where the documents are stored for the meeting. It is advisable for delegates attending a meeting to download the documents available prior to the meeting from the ftp server and onto their personal computers.

Where can I find a temporary document template?

The document template is made available by each TSG/WG in the meeting respective folder on the ftp server.

What happens if I am unable to attend a meeting?

You should contact your chairman and the meeting host indicating when you will be absent.

Work Items and Deliverables

What is my role when my TSG/WGs has to approve a deliverable?

Approval of Technical Specifications and Technical reports by a TSG shall normally be by consensus.

Where consensus cannot be achieved in the TSG a vote may be taken.

When Technical Specifications and Technical Reports become sufficiently stable, they shall be put under change control of the relevant TSG. The further elaboration of these Technical Specifications and Technical Reports shall be achieved by Change Requests (CRs) to be approved by the TSG.

What are the different types of deliverables?

3GPP shall prepare, approve and maintain documents known as Technical Specifications and Technical Reports. Such documents shall be drawn up by the TSGs and shall, following approval at that level, be submitted to the participating Organizational Partners to be submitted to their respective standardization processes.

Can I write an 3GPP Document myself?

Why not?! If you wish to propose a deliverable then bring it to the attention of your chairman and the other members of the TSG/WG in order to discuss the subject.

Each proposed new Work Item shall be supported by at least four Individual Members, and their names shall be recorded in the Work Item definition prepared for the TSG approval. One or more persons shall be named as Rapporteur for the proposed Work Item, and the Rapporteur shall act as the prime contact point on technical matters and for information on progress throughout

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the drafting phases.The supporting Individual Members are expected to contribute to and progress the new work item throughout the drafting phases.

In addition to the above, TSGs shall approve new Work Items, giving all essential parameters. The proposal shall be entered into the 3GPP work programme, clearly marked as a new entry, for which a unique reference identity shall be allocated.

Do I and my company have to support my TSG/WGs Work Items?

Neither you or your company is obliged to support the work items of your TSG/WG, however it is normal that if you and your company are supporting members of a Work Item that you be in agreement with their work and will normally support the production of the related deliverable.

Miscellaneous

How do I resolve the problem with the corrupt file warning in MSWord. Note that this only applies to MSWord2000?

Problem: When opening a document in Word 2000, the following error message appears: This document may be corrupt. To preserve the contents: Choose Select All from the Edit menu, then choose Copy from the Edit menu. Create a new document, then choose Paste from the Edit menu.

Cause: This may be related to something called list templates. A list template is created for every numbering or bulleting scheme defined in the document. Apparently, a minor change in a scheme, or even switching a list from numbered to bulleted creates a new template. In an arcane way, tables are also related to list templates. The template count increases automatically, but cannot be decreased by the user. When more than 1500 templates are defined in the list, the document becomes corrupt. There are more reasons why a document is corrupt, so the fix proposed will not solve the problem 100% of the times.

Resolution:

1. To solve the problem, you need to have MS Office 2000 Service Release 1/1a installed . To check this, in Word on the "Help" menu point to "About Microsoft Word". The first line in the window shows you the MSWord version you have. You should get something like: "Microsoft Word 2000 (9.0.3821 SR-1)". If you don't get SR-1 (or SR-1a) at the end, you need to install the Service Release. Contact your IT department or follow this link: http://support.microsoft.com/support/kb/articles/Q245/0/25.ASP
2. You have to introduce a new entry in the Windows registry. You can do this simply by clicking twice in the file "word_bug_fix.reg" attached. Note that modifying the Windows Registry incorrectly can cause serious problems; this fix simply introduces a new entry in a MSWord part of the registry, but if you don't feel confident, contact your IT department or check the Microsoft link below.
3. Open MSWord normally. The fix proposed will open the corrupted files without warning and delete the unused list templates, so its count goes under 1500. The user will not notice anything, but this implies that the document is modified. When closing, MSWord will ask the user if he wants to save the changes, even if apparently no change has been made.

This bug is confirmed by Microsoft and it is listed in its Support Web Site. Follow this link to get the complete report: http://support.microsoft.com/support/kb/articles/q241/5/81.asp

Do I need a password and user name to access the 3GPP Web site ?

No password is needed to access any information on the 3GPP Web site, all information is openly published.

Can you give me information about which companies manufacture particular types of equipment. Or about what services are available on particular networks?

No. The 3GPP Support Team must remain neutral and must not show bias to any of its Individual Members. Such information may be available from the Global Mobile Suppliers Association (www.gsacom.com) where you will find a statistics area which could be of help.

Technical topics

Where can I find a list of technical terms and abbreviations used in 3GPP documents?

Individual terms are defined in each 3GPP Technical Specification and Technical Report. A compendium of terms and abbreviations can be found in 3GPP TR 21.905. ETSI maintains a list of all terms and abbreviations defined in its publications in "TEDDI".

What is the difference between a SIM and a USIM? What is a UICC?

The Universal Integrated Circuit Card (UICC) is the removable card bearing a silicon chip which holds 3GPP system subscriber information. The UICC is a general purpose card having both non-volatile memory and a general-purpose processor. Thus while it is used, in a 3GPP terminal, to hold (U)SIM information / applications, it is can also be used for other purposes, possibly unrelated to telecommunications. A common use of UICCs is in the well-known credit card format, and there is no reason why a single card could not hold (U)SIM functionality in addition to electronic purse / credit card functionality, or indeed any other application / data.

The Subscriber Identity Module (SIM) is the collection of functions which personalize a 3GPP terminal. The SIM contains static information about the services subscribed to, the phone number, the identity of the home network, a list of preferred roaming

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networks, and so on. The SIM also contains storage capacity for the subscriber's contacts' phone numbers. The term "SIM" is often misused for "UICC". The SIM concept was created during the early development of the GSM standards, and second-generation (based on GERAN) terminals up to and including Release 4 use SIM functionality.

For third generation systems (based on UTRAN), more complex functionality was called for, and the SIM evolved into the USIM or Universal Subscriber Identity Module. Release 99 3rd generations onwards use USIMs rather than SIMs. From Release 5 onwards, both second and third generation terminals use USIMs (though to maintain backwards compatibility with older networks and terminals, later Release 2nd generation USIMs are likely to implement Rel-4 SIM functionality in addition to Rel-5 or later USIM functionality).

For further information on the 3GPP Release system, see the Release page.

What is an R-UIM?

Short answer: nothing to do with us!

Longer answer: the R-UIM is to 3GPP2 systems what the USIM is to 3GPP systems. (3GPP2 is an independent organization responsible for the standardization of CDMA2000.)

I have transferred a movie file from my phone to my PC. Where can I find a player for 3gp files?

The 3gp file format is defined in 3GPP TS 26.244 and in TS 26.412. However, 3GPP has not defined a decoder. Your phone manufacturer may have supplied a player (check the CD-ROM which came with your phone) or look on its web site. Alternatively, search the Internet: a number of commercial players exist, and trial versions of some may be downloaded without charge.

What formalities do I have to go through to get type approval for terminal equipment in Europe? Is there a single point of contact? What standards does my equipment need to conform to in order that I can place it on the market?

The legal requirements for the marketing of electrical products in Europe are governed by various EU Directives, depending on the nature of the equipment. Conformity with any of these Directives can be demonstrated by the use of Harmonized Standards, whose title has been cited in the Official Journal of the European Union. The lists of relevant standards can be found on the Commission web site which can be accessed via http://www.newapproach.org.

General electrical equipment is covered by the EMC Directive & Low Voltage Directives, see http://ec.europa.eu/enterprise/electr_equipment/index_en.htm . The harmonized standards are listed at http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/reflist/lvd.html and http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/reflist/emc.html respectively. More general information on procedures to declare conformity and how equipment should be marked are contained on the web sites related to the two Directives.

Radio Equipment and Telecommunications Terminal Equipment is covered by the Radio and Telecommunications Terminal Equipment Directive, see http://ec.europa.eu/enterprise/rtte/index_en.htm, which also includes a link to the one-stop procedure for "placing on the market" (http://ec.europa.eu/enterprise/rtte/osn.htm). The standards are listed at http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/reflist/radiotte.html .

Further information on EU harmonized standards relevant to telecommunications can be found on the ETSI site at http://www.etsi.eu/WebSite/Standards/Harmonization.aspx, and the published standards themselves can be downloaded via http://pda.etsi.org/pda/queryform.asp.

Where can I find the specification of the SIM Lock feature?

In clause 8 of 3GPP TS 22.022.

Is it possible to determine the date and time of publication of a particular version of a 3GPP document?

1) Meeting contributions (including Change Requests)

Meeting contributions ("TDocs") are uploaded to the public file server shortly before, or during, or shortly after the meeting at which they were discussed (or intended to be discussed). The timestamp of the file can be relied upon as a precise indication of the moment of upload. TDocs created very shortly before or during a meeting may not be uploaded until after the meeting, but will have been made available locally to the participants during the meeting. The timestamp of the Word (or whatever) file within the containing Zip file is a good indication of the earliest moment that the document could have been available. However, some authors will circulate draft or final copies of their TDocs on the relevant group's email exploder some days or even weeks prior to this time. This would be revealed by an examination of the exploder's archive.

2) Technical Specifications and Technical Reports

During the drafting phase (versions lower than 3.0.0), 3GPP TSs and TRs ("Specs") are under the control of their authors ("rapporteurs") and are handled like normal meeting contributions (see above). Revised versions incorporating text agreed by the responsible working group are often made available by the rapporteur via the group's email exploder shortly after the end of the meeting at which such text was discussed. Again, counsultation of the exploder archives can reveal this. Alternatively, a revised draft may be sent directly to the 3GPP Support Team, and it will be uploaded to the public file server (specs archive directory) shortly afterwards. Again, the time stamp of the Zip file can be relied upon to indicate when the upload occurred.

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After formal approval by the TSG (versions 3.0.0 or greater), Specs are edited only by the Support Team. The first approved version is based upon the draft version formally approved by the TSG, and thereafter versions are generated whenever Change Requests are approved by the TSG. These versions are made available shortly after the TSG meeting at which such approval occurred. The date (year and month) shown at the top of the Spec's cover page indicates either the date of (the last day of) the meeting, or the month in which the new version was prepared. However a more precise indication of the date of availability can be obtained from the Spec's web page (via the table at http://www.3gpp.org/specification-numbering) where a precise date is shown in the "available" column.

More information on the procedures relating to Spec handing can be found in 3GPP TR 21.900.

Note that, in accordance with the statement at the foot of the cover page of all 3GPP Specs, 3GPP does not "publish" its Specs per se. Formal publication is the responsibility of the individual Standards Development Organizations which comprise the Organizational Partners of 3GPP. For further information, see http://www.3gpp.org/Official-Publications.

FULL MEETING CALENDAR

GERAN	**63**	**Ljubljana**	25-29 Aug 2014
RAN	**65**	**Edinburgh**	09-12 Sep 2014
CT	**65**	**Edinburgh**	10-11 Sep 2014
SA	**65**	**Edinburgh**	15-17 Sep 2014
GERAN	**64**	**San Francisco**	17-21 Nov 2014
CT	**66**	**Maui**	08-09 Dec 2014
RAN	**66**	**Maui**	08-11 Dec 2014
SA	**66**	**Maui**	10-12 Dec 2014
CT	**67**	**Shanghai**	09-10 Mar 2015
RAN	**67**	**Shanghai**	09-12 Mar 2015
GERAN	**65**	**Shanghai**	09-13 Mar 2015
SA	**67**	**Shanghai**	11-13 Mar 2015
GERAN	**66**	25-29 May 2015	
CT	**68**	**Malmo**	15-16 Jun 2015
RAN	**68**	**Malmo**	15-18 Jun 2015
SA	**68**	**Malmo**	17-19 Jun 2015

ABOUT RELEASES

- Release 13
- Release 12
- Release 11
- Release 10
- Release 9
- Release 8
- Release 7
- Release 6
- Release 5
- Release 4
- Release 1999

BROWSE TECHNOLOGIES

- LTE-Advanced
- LTE
- Carrier Aggregation Explained
- HetNet/Small Cells
- NAS
- The Evolved Packet Core
- HSPA
- UMTS
- W-CDMA
- GPRS & EDGE

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Appendix 11

The Wayback Machine - https://web.archive.org/web/20071102062404/http://www.3gpp.org:80/specs/specs.htm

Quick link to the specifications file server area (http) for those who know where they are going!

To find a particular spec quickly, go here and click on the links in the spec-series in the table or use the links in the "further information" section.

The term "***3GPP specification***" covers all **GSM** (including **GPRS** and **EDGE**) and **W-CDMA** specifications. The following terms are also used to describe networks using the 3G specifications: **UTRAN**, **UMTS** (in Europe) and **FOMA** (in Japan). Revised versions of many of these specifications are produced up to four times a year following the quarterly TSG plenary meetings. (TSG GERAN meets five times a year.) See the table below which gives links to lists of specifications arising from each plenary TSG meeting since the freezing of Release 1999. The month of the meeting and the meeting number are shown in each case. Note that **the tables show only those specifications newly approved or modified at the meeting concerned**; they do *not* contain a complete list of all specifications current following the meeting. For such a list, consult the "status list" - see below.

Following each TSG SA plenary meeting, a complete set of specifications is produced. This set includes not only the new specifications generated at that meeting, but also the latest versions of each specification that was not changed at that meeting. i.e. each directory holds a complete set of specifications. Each set has an associated **status list** as detailed in the table below. Each set (and corresponding status list) includes the specs arising from the TSG GERAN meetings held since the preceding SA meeting. (GERAN meets asynchronously from the other TSGs.)

The **Status List** (ZIPped RTF or Word format) summarizes the current version number for every release of every 3GPP specification following each TSG plenary meeting. Also listed for each specifications are:

- the 3GPP working group and rapporteur responsible for the specification
- the Project Manager in MCC (Mobile Competence Centre) responsible for the specification
- the meeting at which it was, or is expected to be, "frozen" (i.e. the point after which only corrections are allowed)

Full details of the Specifications, their history and current status can be found in the 3GPP Specifications Status database.

year-month	remark	latest status	specs directory	TSG CN meeting number	TSG RAN* meeting number	TSG T meeting number	TSG SA meeting number	TSG GERAN meeting number	TSG CT meeting number
2007-09		StatusList	ftp://ftp.3gpp.org/specs/2007-09		37		37	35	37
2007-06		StatusList	ftp://ftp.3gpp.org/specs/2007-06		36		36	34	36
2007-03		StatusList	ftp://ftp.3gpp.org/specs/2007-03		35		35	33	35
2006-12		StatusList	ftp://ftp.3gpp.org/specs/2006-12		34		34	32	34
2006-09	GERAN henceforward meets synchronously with other TSGs, so no further "delta" directories necessary.	StatusList	ftp://ftp.3gpp.org/specs/2006-09		33		33	31	33
2006-06	New at GERAN only.		ftp://ftp.3gpp.org/specs/2006-06-geran-mtg-30-delta/					30	
2006-06		StatusList	ftp://ftp.3gpp.org/specs/2006-06		32		32		32
2006-04	New at GERAN only.		ftp://ftp.3gpp.org/specs/2006-04-geran-mtg-29-delta/					29	
2006-03		StatusList	ftp://ftp.3gpp.org/specs/2006-03		31		31		31
2006-01	New at GERAN only.		ftp://ftp.3gpp.org/specs/2006-01-geran-mtg-28-delta/					28	
2005-12		StatusList	ftp://ftp.3gpp.org/specs/2005-12		30		30		30
2005-11	New at GERAN only.		ftp://ftp.3gpp.org/specs/2005-11-geran-mtg-27-delta/					27	
2005-09		StatusList	ftp://ftp.3gpp.org/specs/2005-09		29		29		29
2005-08/09	New at GERAN only.		ftp://ftp.3gpp.org/specs/2005-09-geran-mtg-26-delta/					26	
2005-06	New at GERAN only.		ftp://ftp.3gpp.org/specs/2005-06-geran-mtg-25-delta/					25	
2005-06		StatusList	ftp://ftp.3gpp.org/specs/2005-06		28		28		28
2005-04	New at GERAN only.		ftp://ftp.3gpp.org/specs/2005-04-geran-mtg-24-delta/					24	
2005-03	RAN closed and RANnew opened. CN and T closed.	StatusList	ftp://ftp.3gpp.org/specs/2005-03	27	27bis 27	27	27		27

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	CT opened.								
2005-01	New at GERAN only.		ftp://ftp.3gpp.org/specs/2005-01-geran-mtg-23-delta/					23	
2004-12		StatusList	ftp://ftp.3gpp.org/specs/2004-12	26	26	26	26		
2004-11	New at GERAN only.		ftp://ftp.3gpp.org/specs/2004-11-geran-mtg-22-delta/					22	
2004-09		StatusList	ftp://ftp.3gpp.org/specs/2004-09/	25	25	25	25		
2004-08	New at GERAN only.		ftp://ftp.3gpp.org/specs/2004-08-geran-mtg-21-delta/					21	
2004-06	New at GERAN only.		ftp://ftp.3gpp.org/specs/2004-06-geran-mtg-20-delta/					20	
2004-06		StatusList	ftp://ftp.3gpp.org/specs/2004-06/	24	24	24	24		
2004-04	New at GERAN only.		ftp://ftp.3gpp.org/specs/2004-04-geran-mtg-19-delta/					19	
2004-03		StatusList	ftp://ftp.3gpp.org/specs/2004-03/	23	23	23	23		
2004-02	New at GERAN only.		ftp://ftp.3gpp.org/specs/2004-02-geran-mtg-18-delta					18	
2003-12		StatusList	ftp://ftp.3gpp.org/specs/2003-12/	22	22	22	22		
2003-11	New at GERAN only.		ftp://ftp.3gpp.org/specs/2003-11-geran-mtg-17-delta					17	
2003-09		StatusList	ftp://ftp.3gpp.org/specs/2003-09/	21	21	21	21		
2003-09	New at GERAN only.		ftp://ftp.3gpp.org/specs/2003-09-geran-mtg-16-delta					16	
2003-06	New at GERAN only.		ftp://ftp.3gpp.org/specs/2003-06-geran-mtg-15-delta					15	
2003-06		StatusList	ftp://ftp.3gpp.org/specs/2003-06/	20	20	20	20		
2003-04	New at GERAN only.		ftp://ftp.3gpp.org/specs/2003-04-geran-mtg-14-delta					14	
2003-02		StatusList	ftp://ftp.3gpp.org/specs/2003-03/	19	19	19	19		
2003-02	New at GERAN only.		ftp://ftp.3gpp.org/specs/2003-02-geran-mtg-13-delta					13	
2002-12 2002-11		StatusList	ftp://ftp.3gpp.org/specs/2002-12/	18	18	18	18	12	
2002-09		StatusList	ftp://ftp.3gpp.org/specs/2002-09/	17	17	17	17	11	
2002-06	Rel-5 GERAN features content functionally frozen		ftp://ftp.3gpp.org/specs/2002-06-geran-mtg-10-delta/					10	
2002-06	Rel-5 features content functionally frozen (remainder, non-GERAN)	StatusList	ftp://ftp.3gpp.org/specs/2002-06/	16	16	16	16		
2002-04			ftp://ftp.3gpp.org/specs/2002-04-geran-mtg-09-delta/					9	
2002-03	Rel-5 features content functionally frozen (part)	StatusList	ftp://ftp.3gpp.org/specs/2002-03/	15	15	15	15		
2002-02								8	
2001-12		StatusList	ftp://ftp.3gpp.org/specs/2001-12/	14	14	14	14		
2001-11								7	
2001-09		StatusList	ftp://ftp.3gpp.org/specs/2001-09/	13	13	13	13		
2001-08								6	
2001-06		StatusList	ftp://ftp.3gpp.org/specs/2001-06/	12	12	12	12	5	
2001-06	Rel-4 GERAN features content functionally frozen							4	
2001-03	Rel-4 non-GERAN features content functionally frozen	StatusList	ftp://ftp.3gpp.org/specs/2001-03/	11	11	11	11		
2001-01								3	
2000-12 2000-11		StatusList	ftp://ftp.3gpp.org/specs/2000-12/	10	10	10	10	2	
2000-11									
2000-09		StatusList	ftp://ftp.3gpp.org/specs/2000-09/	9	9	9	9	1	
2000-06		StatusList	ftp://ftp.3gpp.org/specs/2000-06/	8	8	8	8		
2000-03				7	7	7	7		
1999-12	R99 features content functionally frozen			6	6	6	6		
1999-10				5	5	5	5		
1999-06					4	4	4		
1999-05				4					
1999-04				3	3	3	3		
1999-03				2	2	2	2		

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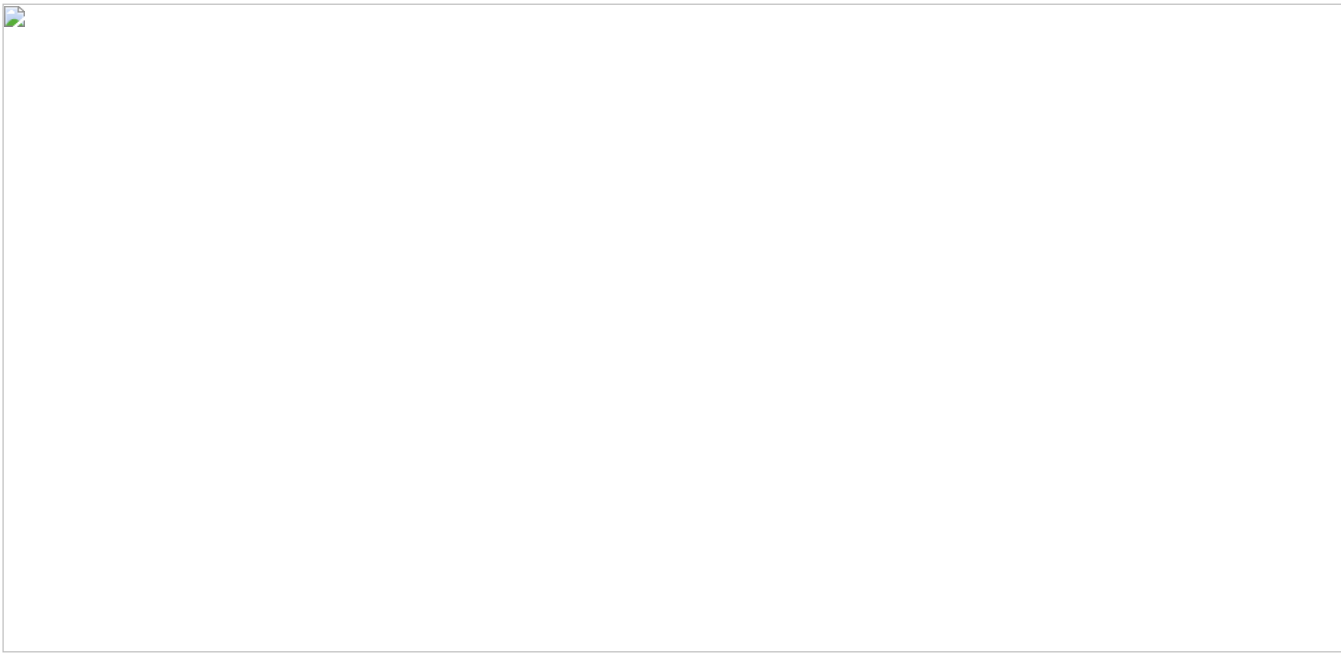
1998-12				1	1	1	1		

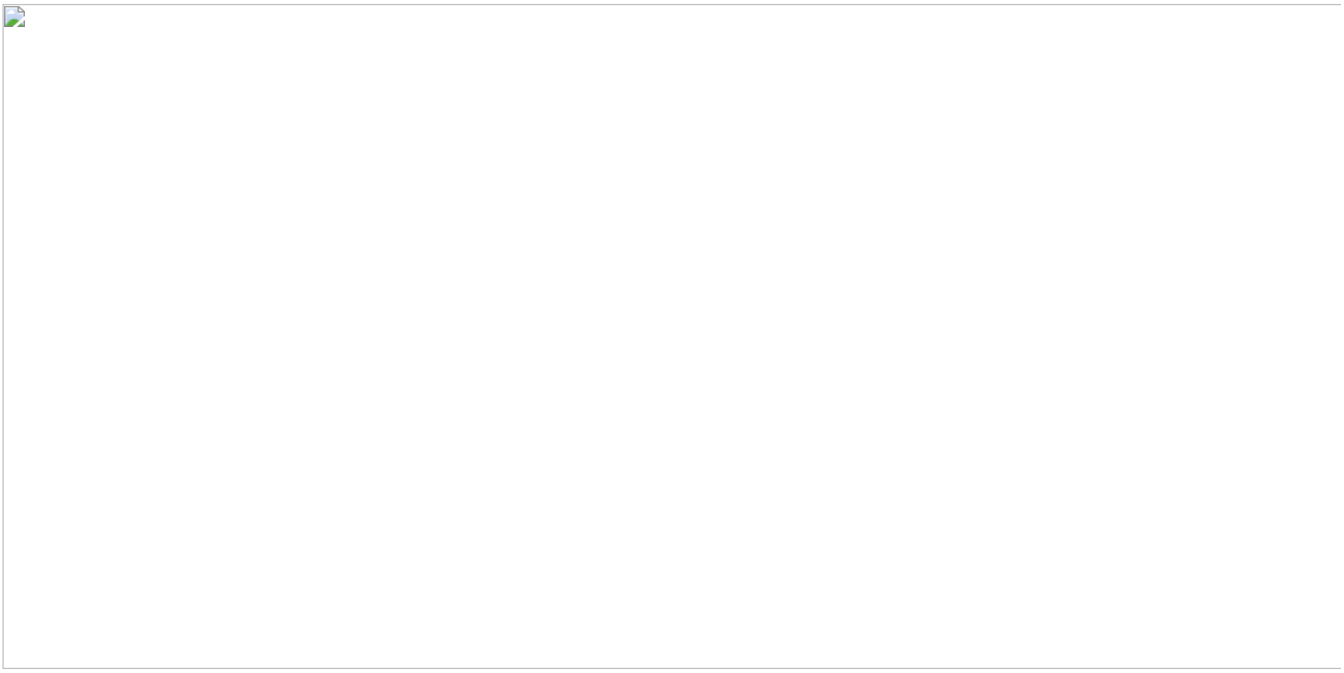
* TSG RAN was closed at the end of meeting 27 and re-opened for meeting 27 bis.

If you plan to download a large number of specifications and are using MS Explorer 4.0 or earlier, it may be worthwhile acquiring an FTP client software tool such as:

- Ipswitch WS_FTP Pro® : This general purpose file transfer program simplifies the process of downloading large numbers of files from an FTP site.
- FTPSync®: This tool allow the user to specify a directory on their local disk and synchronize it with a directory on an FTP site.

For additional information relating to 3GPP Specifications, their creation and maintenance, etc, go here.





This page maintained by Specifications Manager.

last updated:

2007-09-24: #37 (#34) added, charts updated
2007-06-13: #36 (#34) added, charts updated
2007-04-20: typo and link corrected
2007-03-21: typo corrected
2007-03-19: TSGs#35 (GERAN#33) added
2006-12-08: TSGs#34 (GERAN#32) added, charts updated

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2006-09-13 (2): Other TSGs#33 added on same line.
2006-09-13: GP-31 added.
2006-07-06: GP-30 added.
2006-06-12: TSGs#32 added, charts updated
2006-05-02: GP-29 added
2006-03-20: TSGs#31 added
2006-01-23: GP-28 added
2006-01-17: charts updated
2005-12-15: hyperlinks to status lists fixed
2005-12-12: TSGs#30 added
2005-11-15: GP-27 added
2005-10-03: RP-29, CP-29, SP-29 added
2005-09-18: GP-26 misprint corrected
2005-09-06: GP-26 added.
2005-06-28: GP-25 added.
2005-06-13: Hyperlinks for TSGs#28 added
2005-04-28: Charts updated.
2005-04-21: GP-24 directory included.
2005-04-19: Hyperlink for GP-24 list added.
2005-04-04: All TSG links changed as to point to auto pages.
2005-04-01: Links for TSGs#27 changed to point to experimental pages automatically generated from status database rather than manually maintained pages.
2005-03-29: early TSG meeting entries added; GERAN#24 and other TSGs#28 entries added (no hyperlinks); column for TSG CT added
2005-03-21: TSGs#27 added, charts updated
2005-02-01: GERAN#23 added
2005-01-26: broken link to chart fixed
2005-01-19: charts updated
2004-12-23: TSGs#25 added
2004-11-19: GERAN#22 added
2004-11-03: charts updated
2004-09-28: TSGs#25 added, link to 2004-06 status list corrected.
2004-09-01: GERAN#21 added
2004-08-02: Spec availability chart updated.
2004-07-01: GERAN#20 added
2004-06-18: TSGs 24 added
2004-05-07: GP-19 added; clarifications to introductory text above the table of meetings.
2004-04-14: Specs delivery chart updated.
2004-03-26: minor errors in hyperlinks fixed.
2004-03-22: table entry for TSGs 23 added.
2004-02-18: table entry for GP-18 added.
2004-01-27: chart of spec delivery added.
2004-01-05: table entry for TSGs 22 added.
2003-12-03: table entry for GP-17 added.
2003-10-21: "further information" section moved to the "numbering" page.
2003-09-26: table entries for GP-16 and other TSGs 'P-21 added
2003-08-18: broken link repaired, links to cited spec pages made relative.
2003-07-02: typo corrected
2003-06-26: Further GERAN#15 info added; minor cosmetic improvements to text; hyperlinks for identified specs are now to their info page, not their archive storage directory
2003-06-23 - CN, RAN, T, SA #20 info and preliminary GERAN#15 info added
2003-04-25 - GERAN#14 info added
2003-04-24 - quick link to spec series table page added near top; from this it is possible to get to lists of specs in each series, and thence to details of the individual specs.
2003-03-25 - table entry for TSGs#19 added
2003-02-24 - table entry for GERAN#13 added
2003-01-13 - link to CR trends page added.
2002-12-15 - TSGs#18 (GERAN#12) line added; quick link to specs file at top of page added.
2002-10-18 - reference to 3GPP Specifications Status database added.

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Appendix 12

The Wayback Machine - https://web.archive.org/web/20081201021150/http://www.3gpp.org:80/Specification-Numbering

All 3GPP specifications have a specification number consisting of 4 or 5 digits. (e.g. 09.02 or 29.002).

The first two digits define the series, followed by 2 further digits for the 01 to 13 series or 3 further digits for the 21 to 55 series.

The full title, specification number and latest version number for every specification can be found in the current status list (warning: large file!) .

An automated list of Specification numbers - with the Title and details of the Specification Group responsible.

A specification in the 21 to 35 series may apply either to 3G only or to GSM and 3G. A clue lies in the third digit, where a "0" indicates that it applies to both systems. For example, 29.002 applies to 3G and GSM systems whereas 25.101 and 25.201 apply only to 3G.

Most specs in all other series apply only to GSM systems. However, as the spec numbering space has been used up, this guide is frequently broken, and it is necessary to examine the information page for each spec (see the table below) or to check the lists in 01.01 / 41.101 (GSM) and 21.101 (3G) for the definitive specification sets for each system and each Release.

Subject of specification series	3G/GSM R99 and later	GSM only (Rel-4 and later)	GSM only (before Rel-4)
General information (long defunct)			00 series
Requirements	21 series	41 series	01 series
Service aspects ("stage 1")	22 series	42 series	02 series
Technical realization ("stage 2")	23 series	43 series	03 series
Signalling protocols ("stage 3") - user equipment to network	24 series	44 series	04 series
Radio aspects	25 series	45 series	05 series
CODECs	26 series	46 series	06 series
Data	27 series	47 series (none exists)	07 series
Signalling protocols ("stage 3") -(RSS-CN)	28 series	48 series	08 series
Signalling protocols ("stage 3") - intra-fixed-network	29 series	49 series	09 series
Programme management	30 series	50 series	10 series
Subscriber Identity Module (SIM / USIM), IC Cards. Test specs.	31 series	51 series	11 series
OAM&P and Charging	32 series	52 series	12 series
Access requirements and test specifications		13 series (1)	13 series (1)
Security aspects	33 series	(2)	(2)
UE and (U)SIM test specifications	34 series	(2)	11 series
Security algorithms (3)	35 series	55 series	(4)
Evolved UTRA (LTE) aspects	36 series	-	-

Note (1): The 13 series GSM specifications relate to European-Union-specific regulatory standards. On the closure of ETSI TC SMG, responsibility for these specifications was transferred to ETSI TC MSG, (Mobile Specification Group) and they do not appear on the 3GPP file server.

3GPP News
3GPP Partners News

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2008, 4 Dec. Free LTE Webinar
2008 - 2009
2009, 26 Jan. ATIS 3GPP LTE Conference

Other conferences »

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Note (2): The specifications of these aspects are spread throughout several series.

Note (3): Algorithms may be subject to export licensing conditions. See the relevant 3GPP page. See also the relevant ETSI pages .

Note (4): The original GSM algorithms are not published and are controlled by the GSM Association.

Technical Reports are of two classes:

Those intended to be transposed and issued by the Organizational Partners as their own publications; and

Those not intended for publication but which are simply 3GPP internal working documents, used, for example, for documenting planning and scheduling of work, or for holding the interim results of feasibility studies.

The first category have numbers of the form: xx.9xx

The second category have numbers of the form: xx.8xx (feasibility study reports, etc) or, more rarely, 30.xxx / 50.xxx (planning and scheduling)

Missing Specs: Click here to see those Specs not yet available following the most recent round of TSG meetings.

The 3GPP Specifications are stored on the file server as zipped MS-Word files. The filenames have the following structure:

SM[-P[-Q]]-V.zip

where the character fields have the following significance ...

S = series number - 2 characters (see the table above) M = mantissa (the part of the spec number after the series number) - 2 or 3 characters (see above) P = optional part number - 1 or 2 digits if present Q = optional sub-part number - 1 or 2 digits if present V = version number, without separating dots - 3 digits

So for example:

21900-320.zip is 3GPP TR 21.900 version 3.2.0
0408-6g0.zip is 3GPP TS 04.08 version 6.16.0
32111-4-410 is 3GPP TS 32.111 part 4 version 4.1.0
29998-04-1-100 is 3GPP TS 29.998 part 4 sub-part 1 version 1.0.0

Further information:

Latest version The latest versions of the approved specifications in the "latest" directory. The latest version of draft specs (i.e. those not yet under change control) are in the "latest-drafts" directory. See also the page on version numbering.

Particular version All older versions of specifications (where available) are stored in the archive subdirectory . All versions of all releases of a given specification are placed directly under the name of the specification.

Title or subject If you only know the title or the subject, but not the specification number, the best place to start looking is the complete list of all 3GPP specification numbers and titles . This list also shows the most recent version in each Release.

Specs related to a particular working group Each 3GPP TSG Working Group has a home page, which lists the specifications under its responsibility. Follow the links from here

Official versions published by recognized Standards Development Organizations The 3GPP Technical Specifications (and Technical Reports) which are publicly available from this site have, in themselves, no legal standing. They only become "official" when transposed into corresponding publications of the Partner Organizations. If you are looking for the official versions, see the official publications page.

Yet more information:

Work plan The 3GPP Work plan describes the new functionality currently being elaborated in the TSG working groups. It also indicates the expected timescales for their finalization.

Releases (and phases, stages) An introduction to the 3GPP mechanism for specifications releases can be found here.

Historical information If you need to look for old / superseded specifications or change requests, start here.

TSG working methods The procedures for creating, enhancing and maintaining specifications are described in TR 21.900 . A presentation outlining the release and change request process can be found here .

3GPP Drafting rules The rules for drafting specifications are described in TR 21.801 .

Change Requests The change request mechanism is used when a correction or new functionality is required for an existing specification.

Version numbering More information on the version numbering page.

Issuing new TS/TR numbers. More information on this page.

Issuing a new TS or TR Number

New Technical Specification (TS) and Technical Report (TR) numbers are issued by the Specifications Manager on request (by email) from the rapporteur or the Project Manager for the responsible TSG/WG. Any request for a

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new number must contain the following information: Unique_ID value of the Work Item which justifies the new TS or TR (obtainable from the Gantt chart or, more rapidly, from (...)

» (...more)

Version Numbering Scheme

As 3GPP Technical Specifications and Technical Reports evolve from the early drafting stages, though progressively more stable versions, to being brought under change control, so the version number of the document changes. The rules for maintaining the version number are contained in clause 4.4 of 3GPP TR 21.900, but are briefly summarized here. The "version" is comprised of three fields: (...)

» (...more)

Historical Specification information

For ETSI TC SMG meeting documents (including Change Requests), click here. You will need an ETSI On-Line account for access. For 3GPP meeting documents (including Change Requests) choose the appropriate TSG; CN RAN T GERAN SA or workshops.. All available versions of specifications can be found in the specs archive. To see which version of a spec was current at a particular meeting, (...)

» (...more)

3GPP Specification Release version matrix

=http://www.3gpp.org/ftp/Specs/html-...

» (...more)

3GPP Plenary Meetings

Full Meeting Calendar

3GPP RAN/CT/SA #42 - Athens GR - From 2 to 11 December
3GPP GERAN#41 - Valetta (tbc) MT - From 16 to 20 February 2009
3GPP RAN/CT/SA #43 - Biarritz FR - From 3 to 12 March 2009
3GPP GERAN#42 - Shenzhen CN - From 11 to 15 May 2009
3GPP RAN/CT/SA #44 - TBD US - From 26 May 2009 to 6 June 2009

Releases

About Releases

Release 9
Release 8
Release 7
Release 6
Release 5
Release 4
Release 1999
Functionality in early GSM releases

Keywords

Browse Technologies

UMTS
GPRS & EDGE
HSPA
IMS
LTE-Advanced
LTE
W-CDMA

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Appendix 13

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Releases

3GPP uses a system of parallel "releases" - to provide developers with a stable platform for implementation and to allow for the addition of new features required by the market.

Features and contents of each Release

The list of specifications needed for each 3G and GSM release is listed in the TR mentioned in Release description below.

A simple list of Features per Release can be found here

The 3GPP Specification Release version matrix is a listing (with links) of the Specifications - showing the Release that each specification falls in to.

Freeze Dates:

Rel see Work Plan for Features in each Release	**Spec version number** (*see note 4*)	**Functional freeze date, indicative only** (*see note 3*)
Rel-12	12.x.y	Stage 1 freeze March 2013
		Stage 2 freeze December 2013
		Stage 3 freeze June 2014 (RAN protocols: September 2014)
Rel-11	11.x.y	Stage 1 freeze September 2011
		Stage 2 freeze March 2012
		Stage 3 freeze September 2012 (core network protocols stable December 2012, radio access protocols stable March 2013 - though performance parts of RAN work items may not be complete before June 2013)
Rel-10	10.x.y	Stage 1 freeze March 2010
		Stage 2 freeze September 2010
		Stage 3 freeze March 2011 (protocols stable three months later)
Rel-9	9.x.y	Stage 1 freeze December 2008
		Stage 2 freeze June 2009
		Stage 3 freeze December 2009
Rel-8	8.x.y	Stage 1 freeze March 2008
		Stage 2 freeze June 2008
		Stage 3 freeze December 2008
Rel-7	7.x.y	Stage 1 freeze September 2005
		Stage 2 freeze September 2006
		Stage 3 freeze December 2007
Rel-6	6.x.y	December 2004 - March 2005
Rel-5	5.x.y	March - June 2002
Rel-4	4.x.y	March 2001

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R00	4.x.y	see note 1 below
	9.x.y	
R99	3.x.y	March 2000 (closed June 2011)
	8.x.y	
R98	7.x.y	early 1999 (closed December 2007)
R97	6.x.y	early 1998 (closed December 2007)
R96	5.x.y	early 1997 (closed June 2006)
Ph2	4.x.y	1995 (closed June 2006)
Ph1	3.x.y	1992 (closed prior to creation of 3GPP)

Note 1: The term "Release 2000" was used only temporarily and was eventually replaced by "Release 4" and "Release 5" (most elements originally in Release 2000 were renamed Release 4, but some were deferred until Release 5).

Note 2: Specifications with a version number of 0.x.y, 1.x.y or 2.x.y indicates that it is a new, draft, specification which has not yet been approved. The anticipated release is normally shown on the cover of the document.

Note 3: After "freezing", a Release can have no further additional functions added. However, detailed protocol specifications (stage 3) may not yet be complete. In addition, OA&M specs and test specs may lag by some considerable time. A "frozen" Technical Specification is one which can have no further category B or C (new or modified functionality) Change Requests, other than to align earlier stages with later stages; thus all TSs pertaining to a Release may not necessarily be frozen at the time the Release itself is functionally frozen. Indeed since Release 7, the trend has been to freeze each of the three stages independently.

Note 4: In the version number, the field "x" is incremented at each change in the spec resulting from one or more Change Requests approved by the responsible TSG. Field "y" is incremented whenever an editorial change is made to a specification; editorial changes are those which cannot in any way change the technical interpretation of the spec, and are introduced at the discretion of the Support Team. Exceptionally, field "y" is incremented when a newly-provided version of a spec is found to be flawed due to, for example, misimplementation of a newly-approved CR; however, this circumstance is only permitted during the three-week period following the end of an SA (or GERAN) plenary, during which new versions of specs are produced. Every change of version is documented in the "change history" annex of the spec. When "x" is incremented, field "y" is reset to zero. When the Release field (the first digit) is incremented, fields "x" and "y" are reset to zero.

Note 5: "Exceptions" - Identified late-running Features at stage 2 freeze time will automatically imply an implicit delay in the stage 2 freeze date.

Other associated terms

Stages

The term "stage" derives from the ITU-T (originally CCITT) method for categorizing specifications (Recommendation I.130).

- "Stage 1" refers to the service description from a service-user's point of view.
- "Stage 2" is a logical analysis, breaking the problem down into functional elements and the information flows amongst them across reference points between functional entities.
- "Stage 3" is the concrete implementation of the protocols appearing at physical interfaces between physical elements onto which the functional elements have been mapped.

In addition, 3GPP often performs feasibility studies the results of which are made available in Technical Reports (normally 3GPP-internal TRs, numbered xx.8xx, not intended for transposition by the Organizational Partner SDOs). The feasibility study might be considered as a sort of "Stage 0". Furthermore, some Stage 3 specifications require test specifications to be prepared: effectively a "Stage 4".

Phases

This term has two distinct usages within the 3GPP:

- in reference to GSM specifications, Phase 1, Phase 2 and Phase 2+ referred to releases of specifications (see table above);
- some features within GSM/3G specifications have been enhanced over the years. For example, enhancements to the CAMEL functionality are referred to as CAMEL phase 2, CAMEL phase 3 CAMEL phase 4 etc. CAMEL is one of only a few examples within the 3GPP using the term in this sense.

Further information.

The mechanisms for creating and maintaining specifications are described in TR 21.900. A presentation outlining the release and change request process can be found here.

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FULL MEETING CALENDAR

SA	**62**	**Busan**	09-11 Dec 2013
GERAN	**61**	**Sophia Antipolis**	24-28 Feb 2014
CT	**63**	**Fukuoka**	03-04 Mar 2014
RAN	**63**	**Fukuoka**	03-06 Mar 2014
SA	**63**	**Fukuoka**	05-07 Mar 2014
GERAN	**62**	**Valencia**	26-30 May 2014
RAN	**64**	**Sophia Antipolis**	10-13 Jun 2014
CT	**64**	**Sophia Antipolis**	11-13 Jun 2014
SA	**64**	**Sophia Antipolis**	16-18 Jun 2014
GERAN	**63**	**Ljubljana**	25-29 Aug 2014
RAN	**65**	**Edinburgh**	09-12 Sep 2014
CT	**65**	**Edinburgh**	10-12 Sep 2014
SA	**65**	**Edinburgh**	15-17 Sep 2014
GERAN	**64**	**San Francisco**	17-21 Nov 2014
CT	**66**	**US**	08-09 Dec 2014
RAN	**66**	**US**	08-11 Dec 2014

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- GPRS & EDGE
- UMTS
- W-CDMA

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Appendix 14

The Mobile Broadband Standard



Home

NEW: Elections for officials of RAN WG2 to be held in August 2015.

RAN WG2 is in charge of the Radio Interface architecture and protocols (MAC, RLC, PDCP), the specification of the Radio Resource Control protocol, the strategies of Radio Resource Management and the services provided by the physical layer to the upper layers.
Within the scope of TSG RAN, RAN WG2 is responsible for the development of specifications dealing with UTRA, Evolved UTRA, and beyond.

Terms of Reference

The latest terms of reference were approved at RAN#53 in document RP-110964.

RAN WG2 is responsible for:

- Specification of the radio interface architecture and protocol termination
- Specification of radio interface protocols between UE and RAN,
- Specification of radio interface protocols common to RAN and GERAN
- Maintaining the specifications for the protocol used to configure UE loop back functionality for UTRAN
- Specification of radio interface parameters to be exchanged between RNCs and between RNCs and BSCs in case of SRNS relocation
- For EUTRAN, specification of the radio interface parameters to be exchanged between eNodeBs in case of inter eNodeB handover, and between eNodeB and RNC/BSC in case of inter-RAT handovers
- Stage 2 Specifications of the services offered by the physical layer to upper layers
- Specification of Cell selection and re-selection procedures
- Specification of UE capabilities for UE - RAN interface (in collaboration with RAN WG1 for Layer 1 capabilities)
- Definition of RRM strategies to be supported by RAN
- Definition of protocol methodology in RAN specifications
- Identification of the requirements for UE protocol tests to be defined by TSG RAN WG5, for new functions under RAN WG2 responsibility
- For EUTRAN, specification of radio interface protocols between UE and positioning server
- Specification of radio measurements reported to the OAM domain and the radio interface protocols used to collect them

Useful links and information

About RAN WG2	List of elected officials
Documents	Meeting documents
	Specifications
	Work items
Meetings	Next meeting information & previous meeting reports and documents
	Liaisons Statements
	Full RAN WG2 meeting calendar
General info	Email exploder lists

RAN Working groups and Ad Hoc groups	
TSG RAN Plenary	
TSG RAN WG1	Radio Layer 1 specification
TSG RAN WG2	Radio Layer 2 and Radio Layer 3 RR specification
TSG RAN WG3	Iub Iur and Iu specification - UTRAN O&M requirements
TSG RAN WG4	Radio performance and protocol aspects (system) - RF parameters and BS conformance

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RAN Working groups and Ad Hoc groups

TSG RAN WG5	Mobile terminal conformance testing
TSG RAN AHG1	Ad-hoc group on ITU (internal) co-ordination

FULL MEETING CALENDAR

RAN	**99**	**Beijing**	29-29 Aug 2015
CT	**69**	**Phoenix**	14-15 Sep 2015
RAN	**69**	**Phoenix**	14-16 Sep 2015
SA	**69**	**Phoenix**	15-17 Sep 2015
RAN	**999**	**Phoenix**	17-18 Sep 2015
GERAN	**68**	**Anaheim**	16-20 Nov 2015
CT	**70**	**Sitges**	07-08 Dec 2015
RAN	**70**	**Sitges**	07-10 Dec 2015
SA	**70**	**Sitges**	09-11 Dec 2015
GERAN	**69**	**Malta**	15-19 Feb 2016
CT	**71**	**Goteborg**	07-08 Mar 2016
RAN	**71**	**Goteborg**	07-10 Mar 2016
SA	**71**	**Goteborg**	09-11 Mar 2016
GERAN	**70**	23-27 May 2016	
CT	**72**	**SOUTH KOREA**	13-14 Jun 2016
RAN	**72**	**SOUTH KOREA**	13-16 Jun 2016

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Appendix 15

The Mobile Broadband Standard



Cover Story



3GPP RAN Workshop on LAA

Beijing, August 29, 2015

3GPP work on Licensed-Assisted Access (LAA) continues to attract wide industry attention, especially with regard to the coexistence mechanisms being designed for LTE to operate in unlicensed spectrum. Because of this 3GPP RAN has decided to hold an open industry workshop on LAA. The workshop will take place in Beijing on August 29, 2015.

The LAA project was started to study the necessary modifications of LTE to operate in unlicensed spectrum. The project has recently reached an important milestone with the completion of the feasibility study and the approval of the corresponding Technical Report 36.889. Based on the conclusion of the study 3GPP RAN has decided to move the project to normative phase with the specification of LAA downlink operation in Rel-13 (uplink operation will be specified in a later release of LTE). The detailed objectives of the Rel-13 specification work can be found in RP-151045.

READ MORE...

Recent News

RAN at ATIS 5G Symposium

June 8, 2015

Dino Flore, the Chairman of the 3GPP RAN Group, has delivered a presentation to the ATIS 5G Symposium - providing an outline of the main features for the evolution of LTE in Release 13 and our initial plans for 5G.

3GPP Release 13 advances include the following highlights:

- Offload to unlicensed spectrum, considering both LTE/Wi-Fi interworking and LTE over unlicensed (LAA)
- Enhancements for Carrier Aggregation (up to 32 CCs)
- Elevation Beamforming / Full-Dimension MIMO
- Study of downlink multi-user transmissions using superposition coding
- M2M (in 3GPP this is MTC) enhancements
- New radio optimized for the low end of the IoT market
- D2D Enhancements

Speaking at the Symposium, co-located with the "Big Telecom Event" in Chicago on June 8, Dino Flore moved from the now towards the future giving delegates an idea of the timeline for the 3GPP standardization effort for next generation cellular technology, aka 5G.

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3GPP video with TCCA leaders

May 19, 2015

A new 3GPP video discusses how LTE is a vital part of the Critical Communications future, but carries a word of warning from Phil Kidner - the CEO of the TCCA - who believes that the 3GPP specifications are yet to meet all of the mission critical requirements, meaning that TETRA is set to be around for a number of years to come.

READ MORE...

FULL MEETING CALENDAR

GERAN	**67**	**Yin Chuan**	10-14 Aug 2015
CT	**99**	**Vancouver**	13-14 Aug 2015
RAN	**99**	**Beijing**	29-29 Aug 2015
CT	**69**	**Phoenix**	14-15 Sep 2015
RAN	**69**	**Phoenix**	14-16 Sep 2015
SA	**69**	**Phoenix**	15-17 Sep 2015
GERAN	**68**	**Anaheim**	16-20 Nov 2015
CT	**70**	**Sitges**	07-08 Dec 2015
RAN	**70**	**Sitges**	07-10 Dec 2015
SA	**70**	**Sitges**	09-11 Dec 2015
GERAN	**69**	**Malta**	15-19 Feb 2016
CT	**71**	**Goteborg**	07-08 Mar 2016
RAN	**71**	**Goteborg**	07-10 Mar 2016
SA	**71**	**Goteborg**	09-11 Mar 2016
GERAN	**70**	23-27 May 2016	
CT	**72**	**SOUTH KOREA**	13-14 Jun 2016

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Appendix 16

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www.3gpp.org - /ftp/

[To Parent Directory]

```
 9/26/2012  5:02 PM        <dir> .Trash-root
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The Wayback Machine - https://web.archive.org/web/20150924041832/http://www.3gpp.org:80/ftp/tsg_ran/

www.3gpp.org - /ftp/tsg_ran/

[To Parent Directory]

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9/22/2015 10:10 PM        <dir> WG3_Iu
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6/26/2015  9:53 AM        <dir> WG5_Test_ex-T1
11/4/2008  9:08 PM        <dir> WGs_LongTermEvolution
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[To Parent Directory]

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11/17/2014 12:55 AM        <dir> Org
 11/4/2008  8:35 PM        <dir> Outgoing_Liaisons
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12/21/2000  8:03 PM       120168 R2_2000.zip
  1/4/2002  7:12 PM       137260 R2_2001.zip
 1/21/2003  3:07 PM       160005 R2_2002.zip
11/24/2003 11:08 AM       124992 R2_2003.zip
 12/1/2004 10:45 AM       141308 R2_2004.zip
11/14/2005  1:57 PM       175578 R2_2005.zip
  2/2/2009  9:12 AM      1077609 R2_2008.zip
  1/7/2012  3:26 AM      1446267 R2_2009.zip
  1/7/2012  3:27 AM      1255434 R2_2010.zip
 2/14/2012  1:07 AM      1217064 R2_2011.zip
 3/17/2013 11:32 PM      1138815 R2_2012.zip
 2/19/2014  9:15 PM       863709 R2_2013.zip
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 9/14/2015 11:18 AM        <dir> R2_TSs_TRs_early_versions
 9/14/2015 10:43 PM        <dir> Specifications
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 11/4/2008  8:35 PM        <dir> TSGR2_02
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The Wayback Machine - https://web.archive.org/web/20160227053304/http://www.3gpp.org:80/ftp/tsg_ra…

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Appendix 20

3GPP_TSG_RAN_WG2 Archives
July 2015, Week 3

3GPP_TSG_RAN_WG2@LIST.ETSI.ORG

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Subject: Proposed agenda for RAN2-91 Beijing
From: Henning Wiemann <[log in to unmask]>
Reply To: Henning Wiemann <[log in to unmask]>
Date: Thu, 16 Jul 2015 12:22:11 +0000
Content-Type: multipart/mixed
Parts/Attachments: text/plain (760 bytes) , text/html (6 kB) , RAN2-91 Beijing - DRAFT Proposed Agenda.zip (311 kB)

Dear all,

Please find attached the **draft** proposed agenda for RAN2-91 (Beijing). Please provide comments, if any, by Monday 2015-07-20.

Thanks and best regards,
Henning

--
HENNING WIEMANN
3GPP RAN2 Chairman

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Appendix 21

3GPP_TSG_RAN_WG2 Archives
September 2015, Week 4

3GPP_TSG_RAN_WG2@LIST.ETSI.ORG

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Subject: Draft Report of 3GPP TSG RAN WG2 meeting #91 in Beijing, China for comment
From: Yong-jun Chung <[log in to unmask]>
Reply To: Yong-jun Chung <[log in to unmask]>
Date: Fri, 25 Sep 2015 14:11:19 +0000
Content-Type: multipart/alternative
Parts/Attachments: text/plain (508 bytes) , text/html (5 kB)

Dear all,

The draft Report of 3GPP TSG RAN WG2 meeting #91 (Beijing), version 1.0 and associated annexes are now available **in R2-154002** for your comment
on the FTP server at: ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_91/Report

Please provide me with any comments and corrections, by **8 October 2015**, so that I can incorporate them and submit the report for approval at RAN2#91bis in Malmo.

Best regards,
Yong-Jun

_____
Yong-Jun CHUNG, ETSI MCC
[log in to unmask]

ATOM RSS1 RSS2

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Appendix 22

3GPP TSG-RAN Working Group 2 meeting #91bis
Malmö, Sweden, October 5 – 9, 2015

R2-154032

Agenda Item: 2.2

Source: ETSI MCC

Title: Report of 3GPP TSG RAN WG2 meeting #91

Beijing, China, August 24 – 28, 2015

Document for: Approval

Report of 3GPP TSG RAN WG2 meeting #91

held in Beijing, China
August 24 - 28, 2015

ETSI Mobile Competence Centre (MCC)

August 31th, 2015

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Organisation of the meeting

Meeting:	3GPP TSG RAN WG2 #91	
Meeting location:	Beijing, China	
Duration:	Monday 24.08.2015 - Friday 28.08.2015	
Host:	Huawei	
TSG RAN WG2 Chairman:	Henning Wiemann (Ericsson)	email: henning.wiemann@ericsson.com
TSG RAN WG2 Vice chairman:	Diana Pani (Interdigital Communications)	email: diana.pani@interdigital.com
TSG RAN WG2 Vice chairman:	SeungJune Yi (LG Electronics)	email: seungjune.yi@lge.com
TSG RAN WG2 MCC Support:	Yong-Jun Chung (ETSI MCC)	email: Yong-jun.Chung@etsi.org
Email reflector:	3GPP_TSG_RAN_WG2@LIST.ETSI.ORG	
Technical documents:	ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_91/Docs	
Ad hocs:	Official parallel ad hocs held (see agenda item 2.1) on UMTS session (see AI 8-11, Mon - Thu): chaired by Diana Pani LTE Breakout session (UP matter: see AI 6.1.2, 6.2.1.2, 6.2.3.2, 6.2.9.2 on Mon and AI 7.9, 7.2.3 on Thu chaired by SeungJune Yi, ProSe and Ext. DRX matter: see AI 7.5, 7.10 on Wed chaired by Diana)	
next meetings:	TSG RAN #69	14.09. - 16.09.2015 Phoenix, USA
	TSG RAN WG2 #91bis	05.10. - 09.10.2015 Malmö, Sweden
	TSG RAN WG2 #92	16.11. - 20.11.2015 Anahaim, USA
	TSG RAN #70	07.12. - 10.12.2015 Sitges, Spain

Statistics/Executive Summary

TSG RAN WG2 #91 was held in Bdijing, China, hosted by the Huawei of 3GPP (co-located with RAN1/4). This RAN WG2 meeting had 2 parallel sessions: UMTS session (see agenda items 8-11; Mon - Thu) and LTE Breakout session (UP matter: see AI 6.1.2, 6.2.1.2, 6.2.3.2, 6.2.9.2 on Mon and AI 7.9, 7.2.3 on Thu in Annex G, ProSe and Ext. DRX matter: see AI 7.5, 7.10 on Wed in Annex H). All other topics were treated in the parallel main session.

- 290 participants (registered before the meeting: 345 participants).
- 973 Tdocs allocated with 918 available contributions.
- 51 incoming liaison statements (6 on UTRA, 42 on LTE; and 3 on joint aspects): All were treated and noted.
- 21 outgoing liaison statements (4 on UTRA, 16 on LTE; and 1 on joint aspects), 1 of them agreed by email.
- 29 email discussions scheduled after RAN2 #91 (plus email discussions of RAN2 WI/SI status reports and 0 CR from RAN3 to RAN2 TS 36.300), see Annex F.
- Among 179 change requests (CRs) in total: 52 agreed (7 for UTRA 25.xxx/34.xxx specs, 45 for LTE 36.xxx specs and 0 to 37.xxx specs) and 0 technically endorsed CR for RAN #69.
- REL-13 WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC) (AI 5.1):
  RAN2 made agreements on ACDC impacts on AS layer and agreed to send the LS in R2-153876 to CT1 and SA1 summarizing the ACDC agreements.
- REL-13 SI: Study on Indoor Positioning Enhancements for UTRA and LTE (AI 5.2):
  RAN2 agreed TPs on protocol aspects of Idoor positioning enhancements in R2-153877, R2-153922 R2-153878 and R2-153920.
- REL-13 WI: Licensed-Assisted Access using LTE (AI 7.1):
  An Updated running stage-2 CR provided in R2-153907 after email discussion [91#10][LTE/LAA] capturing RAN2 agreements on RRM measurements.
- REL-13 WI: CA enhancements (AI 7.2):
  Updated running 36.300 CR endorsed in R2-153963 and new running MAC 36.321 CR and RRC 36.331 CR endorsed after email discussion [91#11][LTE/CAe] and [91#12][LTE/CAe] capturing RAN2 agreements on carrier aggregation
- REL-13 WI: Single-Cell point-to-multipoint transmission (AI 7.3):
  RAN2 made agreements on SC-PTM configuratioon and opoeration and endorsed running stage-2 CR after email discussion [91#13][LTE/SC-PTM] capturing RAN2 agreements. Also RAN2 agreed to send the LS in R2-153965 on SC-PTM transmissioon to RAN1.

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- REL-13 WI: Further LTE Physical Layer Enhancements for MTC (AI 7.4):
  Updated running stage-2 CR in R2-153967 capturing RAN2 agreements on SIB, Random access and Paging endorsed and the LS in R2-153868 to RAN1 agreed after email discussion [91#14][LTE/MTC]. Also, the LS on C-IoT/MTC data transmission targets for security-related procedures to SA3 is agreed in R2-153969.
- REL-13 WI: ProSe enhancements (AI 7.5):
  Running stage-2 CR to capture RAN2 agreements endorsed after email discussion [91#16][LTE/eD2D]. Also, the topic on relay selection/re-selection will be discussed until the next meeting through email discussion [91#31][LTE/eD2D].
- REL-13 WI: LTE-WLAN Radio Level Integration (AI 7.6):
  Updated running stage-2 CR capturing RAN2 agreements was endorsed in R2-152972 after email discussion [91#15][LTE/WiFi].
- REL-13 WI: Multicarrier Load Distribution in LTE (AI 7.7):
  Email discussion [91#28][LTE/LoadBalancing] planned on reporting on redistrubution schemes and draftCR until next meeting.
- REL-13 SI: Further MDT enhancements (AI 7.8):
  TR 36.880 v1.0.0 on Study on further enhancements of Minimization of Drive Tests (MDT) for E-UTRAN was agreed to submit to RAN plenary for approval after email discussion [91#06][LTE/MDT].
- REL-13 WI: Dual Connectivity Enhancemnets (AI 7.9):
  RAN2 made further agreements on PDCP data transmission.
- REL-13 WI: RAN enhancements for extended DRX in LTE (AI 7.10):
  RAN2 agreed the LS to RAN4 on extended DRX in R2-153883.
- REL-13 SI: Study on Latency reduction techniques for LTE (AI 7.11):
  TR 36.881 v0.3.0 on Study on Latency reduction techniques for LTE was agreed in R2-153910 after email discussion [91#17][LTE/Latency].
- REL-13 WI: L2/L3 Downlink enhancements for UMTS (AI 11.1):
  RAN2 discussed on Retrievable configurations , Seamless URA_PCH to CELL_FACH transitions , RNTI extension mechanisms and Improved HARQ retransmission then made working assumptions for further work. Also the LS to RAN3 on Idle to connected mode transition optimization agreed in R2-153895.
- REL-13 WI: Power saving enhancements for UMTS (AI 11.2):
  RAN2 agreed the LS to RAN4 on eDRX measurements in Idle mode for UMTS in R2-153902 and to RAN3 on enabling return into PSM for UMTS in R2-153903.
- REL-13 WI: Support of EVS over UTRAN CS (AI 11.3):
  There was joint RAN1 and RAN2 session to treat all RAN1 and RAN2 Tdocs together. Reply LS to SA4 on EVSoCS agreed in R2-153904.
- REL-13 SI: Study on Network-Assisted Interference Cancellation and Suppression for UMTS (AI 11.4):
  Only few Tdocs were treated and noted.
- REL-13 WI: Multiflow Enhancements for UTRA (AI 11.5):
  RAN2 agreed CRs on Introduction of the Multiflow 3F-4C configuration in R2-153075 (TS 25.321), R2-153900 (TS 25.302) and R2-153901 (TS 25.331).
- REL-13 WI: HSPA Dual-Band UL carrier aggregation (AI 11.6):
  Only few Tdocs were treated and noted.
- REL-13 WI: Application specific Congestion control (AI 11.7):
  Only few Tdocs were treated and noted.

Note: The sequence in which the different topics appear in this report is related to the agenda of the meeting. However, the Tdocs do not necessarily appear in the sequence as they were treated in the meeting.

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1 Opening of the meeting (9 AM)

TSG RAN WG2 chairman Henning Wiemann (Ericsson) opened the meeting RAN WG2 #91 on Monday morning 24.08.2015 at 09:00 o'clock.

On behalf of the host,Huawei of 3GPP, Mr. Yi, Guo (Huawei) welcomed the delegates to Beijing, China and explained organisational issues.

RAN WG2 meeting rooms in the China World Hotel:

Main RAN2 room:	Conference Hall A (Level 1 Floor),	planned for 250 chairs, Mon-Fri
RAN2 LTE ad hoc room:	Function Room 12 (Level 1 Floor),	planned for 100 participants, Mon - Thu
RAN2 UMTS ad hoc room:	Function Room 1 (Arcade level),	planned for 35 participants, Mon - Thu

1.1 Call for IPR

Henning Wiemann (TSG RAN WG2 chairman) made the following call for IPRs and reminded the delegates of their obligations with respect to IPRs:

> The attention of the delegates of this Working Group is drawn to the fact that **3GPP Individual Members have the obligation** under the IPR Policies of their respective Organizational Partners to **inform their respective Organizational Partners of Essential IPRs they become aware of**.
>
> The delegates were asked to take note that they were hereby invited:
>
> - to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.
> - to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Statement and the Licensing declaration forms (http://webapp.etsi.org/Ipr/).

NOTE: IPRs may be declared to the Director-General or Chairman of the SDO, but not to the RAN WG2 Chairman.

1.2 Network usage conditions

The PCG has laid down the following network usage conditions that were shortly presented by the RAN2 chairman:

> 1. **Users shall not use the network to engage in illegal activities. This includes activities such as copyright violation, hacking, espionage or any other activity that may be prohibited by local laws**.
>
> 2. **Users shall not engage in non-work related activities that consume excessive bandwidth** or cause significant degradation of the performance of the network.
>
> Since the **network is a shared resource**, users should exercise some basic etiquette when using the 3GPP network at a meeting. It is understood that high bandwidth applications such as downloading large files or video streaming might be required for business purposes, but delegates should be strongly discouraged in performing these activities for personal use. Downloading a movie or doing something in an interactive environment for personal use essentially wastes bandwidth that others need to make the meeting effective. The meeting chairman should remind end users that the network is a shared resource; the more one user grabs, the less there is for another. Email and its attachments already take up significant bandwidth (certain email programs are not very bandwidth efficient). In case of need the chair

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can ask the delegates to restrict IT usage to things that are essential for the meeting itself.

1. **DON'T place your WiFi device in ad-hoc mode**
2. **DON'T set up a personal hotspot in the meeting room**
3. **DO try 802.11a if your WiFi device supports it**
4. **DON'T manually allocate an IP address**
5. **DON'T be a bandwidth hog by streaming video, playing online games, or downloading huge files**
6. **DON'T use packet probing software which clogs the local network (e.g., packet sniffers or port scanners)**

1.3 Other

The PCG has laid down the following conditions that were shortly presented by the RAN2 chairman:

In accordance with the Working Procedures it is reaffirmed that:

(i) compliance with all applicable antitrust and competition laws is required;

(ii) timely submissions of work items in advance of TSG or WG meetings are important to allow for full and fair consideration of such matters; and

(iii) the chairman will conduct the meeting with strict impartiality and in the interests of 3GPP

Note on (i): In case of question please contact your legal counsel.

Note on (ii): WIDs don't need to be submitted to the RAN2 meeting and will typically not be discussed here either.

2 General

RAN WG2 chairman: THANK YOU to companies that request TDoc numbers and submit contributions early before deadline (really appreciated). Will start to refrain from treating late documents.

2.1 Approval of the agenda

R2-153001 Proposed agenda for RAN2 #91 Beijing, China, 24.8.-28.8.2015; Ericsson (RAN2 chairman); agenda;
=> Agreed

Time-schedule is only indicative (i.e. topics might move forward/backward!):

Schedule	Main room	LTE Breakout room	UMTS room
Mon 09:00 -> 13:00	[2],[3],[4] [5.1] ACDC [5.2] Indoor Positioning		
~15:00 ->	[6.1.1] LTE Rel-8/9/10/11 **CP** [6.2] LTE Rel-12	[6.1.2] LTE Rel-8/9/10/11 **UP** [6.2.1.2] DC UP [6.2.3.2] ProSe UP [6.2.9.2] Other UP	[8] UMTS Rel-8/9/10 [9] UMTS Rel-11 [10] Rel-12 [11.5] Multiflow
Tue 08:30 ->	[6.2] LTE Rel-12	[7.9] DC Enh. UP Stage-3	[11.1] DL enh.

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Tue 14:30 -> Tue 17:00 ->	[7.4] MTC Low Cost	[7.5] ProSe Enh. (Relay)	
Wed 08:30 ->	"Aggregation Day" [7.6] LTE+WiFi [7.2] CA Enhancements [7.1] LAA	[7.10] Ext. DRX [7.5] ProSe Enh.	[11.3] EVS over UTRAN CS [11.4] NAICS [11.2] Power saving enh.
Thu 8:30 -> 14:30 ->	[7.7] Load balancing [7.3] SC-PTM [7.8] MDT Enhancements [7.11] Latency Enh. [7.12] LTE Other Rel-13 [7.13] LTE TEI13	[7.9] DC Enh. UP Stage-3 [7.2.3] CA Enh UP Stage-3	[11.6] Dual Band HSUPA [11.7] ACDC [11.8] UMTS TEI13 Comebacks
Fri 8:30 -> until 17:00	Left-overs, Comebacks including Joint LTE/UMTS		

Chairing of UTMS Sessions

In this meeting not all UMTS sessions will be chaired by the UMTS Vice Chairman. Instead, the following delegates volunteered to chair UMTS sessions as follows:

Francesco Pica (Qualcomm): "*Power saving enhancements for UMTS*"

Mark Curran (Ericsson): "*Support of EVS over UTRAN CS*" and "*Study on Network-Assisted Interference Cancellation and Suppression for UMTS*"

Breaks

Morning coffee: 10:30 to 11:00
Lunch: 13:00 to 14:30
Afternoon coffee: 16:30 to 17:00

2.2 Approval of the report of the previous meeting

R2-153002 Draft report of RAN2 RAN2 #90, Fukuoka, Japan, 25.05.-29.05.2015; ETSI MCC; report;
R2-153059 Draft report of RAN2 RAN2 #90, Fukuoka, Japan, 25.05.-29.05.2015; ETSI MCC; report;
=> Report is Agreed in R2-153060

2.3 Reporting from other meetings

2.3.1 RAN-68 Malmö

UE capabilities/FGIs (Rel-12)

An LS (RP-151105) was sent to clarify the decisions about mandatory/optional REL-12 UE features.

CRs regarding new UE categories 15 & 16 in Rel-12 were approved (RP-150926, RP-150951).

RAN4 discussed the need to support rank3/4 in TM3 and TM4 (see incoming LS)

Ongoing Rel-13 WI/SI

RAN enhancements for extended DRX in LTE
RAN agreed that extended connected mode DRX cycle beyond 10.24 seconds is no longer pursued in the REL-13 WI LTE_extDRX-Core (see RP-150799).

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New WIs/SIs (with impact on RAN2)

LTE
R1: Licensed-Assisted Access using LTE; WID: RP-151045

R1: Feasibility Study on LTE-based V2X Services; WID: RP-151109

R1: Elevation Beamforming/Full-Dimension FD MIMO; WID: RP-151085

R2: Support of single-cell point-to-multipoint transmission in LTE; LTE_SC_PTM-Core; WID: RP-151110

UMTS
R1: DL TPC enhancements for UMTS: WID: RP-151044

R2: L2/L3 Downlink enhancements for UMTS; WID: RP-151043

R2: Power saving enhancements for UMTS; WID: RP-151092

Cellular Internet of Things

PCG way forward on "Clean Slate" was reported (RP-150582). An LS to SA on architecture for Clean Slate CIOT was approved in RP-151087 asking SA2 to progress their SI FS_AE_CIoT and to provide the status to RAN #69.

2.4 Others

Rapporteur changes

Spec	former rapporteur	proposed new rapporteur

Isolated impact analysis

Note that an isolated impact analysis is required for Rel-8 to Rel-12 CRs from Q2 2015 onwards.

Only corrections where there is a proven problem are allowed for frozen releases (Rel-8 to Rel-12).

RAN2 WG compendium

R2-153003 3GPP TSG RAN WG2 compendium v28.0 (status after RAN #68); ETSI Secretariat; other; Not treated

Latest version can always be found at ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Org/RAN2_Compendium/

Time Budget

The time budget endorsed at RAN-68 is available in RP-150982.

3G Ultimate

R2-153067 Tutorial for use of the 3G Ultimate Tdoc allocation tools; ETSI MCC; other; Not treated

Elections

There will be Chairman / Vice-chairmen elections during this meeting. The plan is to handle it in 3 steps:

1) Chairman election
2) Vice chairman election (intention to chair LTE breakout sessions)
3) Vice chairman election (intention to chair UMTS and LTE breakout sessions)

Chairmanship Candidates (status 24.08.2015):

Name	Company / Partner
Mr. Benoist Sébire	Nokia Networks Japan / ARIB
Mr. Richard Burbidge	Intel / ATIS
Mr. Johan Johansson	MediaTek Beijing Inc. / CCSA

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Vice Chairmanship Candidates (status 24.08.2015):

Name	Company / Partner
Dr. Nan Hu	China Mobile Com. Corporation / CCSA
Ms. Diana Pani	INTERDIGITAL COMMUNICATIONS / ETSI

Election schedule for Chairmanship:

The 1st ballot: Monday afternoon coffee break time, 16:30 to 17:00
In case of 2nd ballot: Tuesday afternoon coffee break time, 16:30 to 17:00
In case of 3rd ballot: Wednesday afternoon coffee break time, 16:30 to 17:00

Election place for Chairmanship:

Function Room 4B (Arcade level)

Delegates who have the voting right should be **wearing their badge** or showing a business card for checking their identity. In case of proxy voting, please bring the proxy voting form if you didn't submit before.

Voting rules (see working procedures): When, in the first ballot, no candidate has obtained 71% of the votes cast, a second ballot shall be held. In the second ballot, in cases where there are only two candidates, the candidate obtaining the higher number of votes is elected. In cases where there are more than two candidates, if none of them has obtained 71% of the votes, a third and final ballot shall be held among the two candidates who have obtained the highest number of votes in the second ballot. The candidate obtaining the higher number of votes in the third ballot is then elected.

Further information
R2-153058 RAN WG2 chairman and vice chairmens elections; ETSI MCC; other;
Not treated

2.4.1 Election result first ballot

It was checked on Monday whether there are any further candidates. No further candidates.

First ballot was carried out on Monday 24.08.2015 16:30 - 18:00 CEST:

(Original schedule was on Monday 24.08.2015 16:30 - 17:00 CEST but it was extended to 18:00 due to long queing for 212 votes.)

Total number of votes: 230

Ballot papers issued: 212

Abstained or spoiled: 4

Valid votes: 208 (100%)

Mr. Benoist Sébire: 44 (21.15%)

Mr. Richard Burbidge: 96 (46.15%)

Mr. Johan Johansson: 68 (32.69%)

Observers: Mr. Zelmer, Donald E. (AT&T)

Ms. Kathy Wu (Huawei)

MCC: Mr. Yong-Jun Chung (MCC)

=> conclusion: Quorum acheived, no candidate achieved 71%, 2nd ballot necessary.

=> Mr. Benoist Sébire indicates that he will step down and not participate in a second ballot.

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=> Second ballot on Tuesday among two candidates: Mr. Richard Burbidge and Mr. Johan Johansson

=> Second ballot will be during the Tuesday afternoon coffee break (16:30 to 17:30).

2.4.2 Election result second ballot

Second ballot was carried out on Tuesday 25.08.2015 16:30 - 17:30 CEST:

Total number of votes: 230

Ballot papers issued: 210

Abstained or spoiled: 2

Valid votes: 208 (100%)

Mr. Richard Burbidge: 123 (59.14%)

Mr. Johan Johansson: 85 (40.86%)

Observers: Mr. Zelmer, Donald E. (AT&T)

Ms. Kathy Wu (Huawei)

MCC: Mr. Yong-Jun Chung (MCC)

=> Mr. Richard Burbidge is elected as new RAN2 chairman on Tue 25.08.2015

2.4.3 Election result Vice Chairmen

It was checked on Tuesday whether there are any further candidates for RAN2 vice chairman after election of RAN2 chairmanship. No further candidates.

First vice chairman position with the intention to chair LTE breakout sessions

=> Ms. Diana Pani does not run for this position
=> Dr. Nan Hu is elected for the first vice chairman position by acclamation on Tue 25.08.2015

Second vice chairman position with the intention to chair UMTS and LTE breakout sessions

=> Ms. Diana Pani is elected for the second vice chairman position by acclamation on Tue 25.08.2015

3 Incoming liaisons

Note: LSs are moved to the respective agenda items if any.

3.1 Joint UMTS/LTE relevance

FS_IoT_LC

R2-153006 LS on Efficient Small Data Transfer (GP-150654; contact: Ericsson); GERAN2; LS in; Rel-13; FS_IoT_LC;
=> Noted

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R2-153042 LS on Completion of Study Item on Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things (FS_IoT_LC) (GP-151041; contact: Vodafone); GERAN

[Late]

=> Noted

Rel-12 Mandatory / Optional

R2-153022 Reply LS to R2-150703 on LTE Rel-12 UE feature list (RP-151105; contact: NTT DOCOMO); RAN; LS in; Rel-12;
=> Noted

eDRX (LTE_extDRX-Core and UTRA_SDATA_POWSAV-Core)

R2-153032 LS on paging co-ordination for extended idle mode DRX (S2-152697; contact: Qualcomm); SA2; LS in; Rel-13; eDRX;
=> Noted
=> See draft reply LS in R2-153853

R2-153033 LS on extended connected mode DRX (S2-152698; contact: Qualcomm); SA2; LS in; Rel-13; FS_eDRX;
=> Noted

Token Bucket (SA4)

R2-153027 Reply LS to S2-151654 on requested feedback on TR 26.924 (S2-152081; contact: Ericsson); SA2; LS in; Rel-13; QOSE2EMTSI;
=> Noted

R2-153036 LS on bitrate variations and handling in RAN (S4-150866; contact: Ericsson); SA4; LS in; Rel-13; QOSE2EMTSI;
- Ericsson thinks that defining different window sizes for the same QCI will be difficult since the eNB could not distinguish when to apply which value.
- Chairman assumes that if at all, there would only be recommendations in SA4 specifications.

=> Noted
=> Can discuss offline during the week
=> See draft reply LS in R2-153854

Energy Efficiency Measurements (SA5)

R2-153038 LS on update on Cooperation for Energy Efficiency Measurements (S5-153359; contact: Nokia Networks); SA5; LS in; Rel-13; OAM-PM_EE;
=> Noted

IETF - ECN

R2-153008 Explicit Congestion Notification for Lower Layer Protocols Submission (IETF LS; contact: EMC); IETF; LS in;
- Chairman wonders whether we should forward this to RAN3
- Nokia Networks points out that we mention ECN in our specifications. Ericsson thinks we should check carefully if the proposed changes have any impact on our specifications

=> Postponed

The following LSin:
- R2-153020 and R2-153023 treated under AI 6.1.1
- R2-153028 treated under AI 4.2
- R2-153005, R2-153041 and R2-153044 treated under AI 5.1

3.2 LTE relevance

CA - PH Reporting

R2-153045 Reply LS on Type 2 Power Headroom reporting; (R1-154764, contact: Intel); RAN1; LS in; Rel-13; LTE_CA-Core
=> LS was handled in the UP Session
=> Noted

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IOPS

R2-153004 Reply LS to S2-151423 = R2-151027 on proposed method of restricting access to IOPS cells (C1-152403; contact: AT&T); CT1; LS in; Rel-13; FS_IOPS_St2;
- Noted

R2-153046 Reply LS to S2-151423 = R2-151027 on proposed method of restricting access to IOPS cells (S1-152750; contact: Applied Communication Sciences); LS in; Rel-13; FS_IOPS_St2
=> Noted

TEI13 - Paging

R2-153014 Response LS to S2-150698 = R2-150027 on Paging Optimisation (R3-151280; contact: Ericsson); RAN3; LS in; Rel-13; TEI13;
=> Noted

R2-153031 Reply LS to R3-151280 = R2-153014 on Paging Optimisation (S2-152696; contact: Alcatel Lucent); SA2; LS in; Rel-13; TEI13;
=> Noted

In addition, the following LSin:
- R2-153020, R2-153023, R2-153045, R2-153048, R2-153049 and R2-153050 treated under AI 6.1
- R2-153007, R2-153015, R2-153021, R2-153051, R2-153052, R2-153053 and R2-153054 treated under AI 7.4
- R2-153009, R2-153010, R2-153011, R2-153024, R2-153025, R2-153026, R2-153030, R2-153034, R2-153035 and R2-153047 treated under AI 7.5
- R2-153012 treated under AI 7.2

3.3 UMTS relevance

In addition, the following LSin:
- R2-153039, R2-153040, R2-153043 treated under AI 11.3
- R2-153013 treated under AI 11.5
- R2-153018 treated under AI 11.6
- R2-153037 and R2-152012 treated under AI 11.3

4 Joint UMTS/LTE: Rel-12 and earlier releases

Contributions submitted under this agenda item handled in a joint UMTS/LTE session.

4.1 Joint UMTS/LTE: Rel-11 and earlier releases

(SIMTC-RAN_OC-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Sep. 12, WID: RP-111373)

(eMDT_UMTSLTE-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec.12, WID: RP-121204)

(SONenh2_LTE_UTRA-Core, leading WG: RAN3, REL-11, started: Sep.11, closed: Dec.12, WID: RP-120314)

(rSRVCC-GERAN, leading WG: GERAN2, REL-11, started: Sep.11, closed: Nov.13, WID: GP-111290)

Including corrections to joint LTE+UMTS TEI functionality in Rel-8 to 11. E.g. “Multiple Frequency Bands per Cell”, …

UMTS Neighbour Cell Lists

Including output of [90#21][Joint/TEI11] Limitation of UMTS neighbour cell lists (Huawei)

R2-153600 Report of [90#21] [JointTEI11] Limitation of UMTS neighbour cell lists; Huawei; report; Rel-11; TEI11;
- Intel thinks that no noticeable issues have been identified so far. Huawei has received reports of such issues from operators. QC agrees with Intel that most companies did not see a need for any enhancement. Huawei would suggest discussing further during this week and conclude on Friday whether any enhancements are needed. Nokia Networks

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agrees with Intel and QC that nothing is needed and wonders what we would discuss during this week. Huawei thinks that quite few companies expressed an opinion.
=> RAN2 sees no need for any enhancement
=> Noted

4.2 Joint Rel-12 WIs/SIs

Input to any other Rel-12 Joint UMTS/LTE WIs/SIs not explicitly listed above.

(EHNB_enh3-Core, leading WG: RAN3, REL-12, started: Sep.12, **closed**: Dec 13, WID: RP-130741)

(MTCe_RAN-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Sep.14, WID: RP-132053)

(UTRA_LTE_WLAN_interw-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Sep.14, WID: RP-132101)

(LTE_UTRA_IncMon-Core, leading: RAN4, REL-12, started: Dec.13, **closed**: Dec. 14, WID: RP-132061)

UTRA_LTE_WLAN_interw-Core

Incoming LSs

R2-153028 LS on UE Handling of RAN Rules for WLAN Interworking (S2-152686; contact: Qualcomm); SA2; LS in; Rel-12; TEI12;
=> Reply LS postponed

Outgoing LSs

R2-153855 Reply LS on UE Handling of RAN Rules for WLAN Interworking; contact: Qualcomm; to SA2, CC: CT1; LS out; Rel-12; UTRA_LTE_WLAN_interw-Core, TEI12;
- Nokia Networks thinks that we did not reach consensus and might not need to send an LS. Nokia Networks wonders why this has not been discussed further offline. We should aim for reaching consensus. Nokia Networks thinks we should continue the discussion in RAN2. Vodafone thinks that currently the LOEI is not supposed to overrule the RAN rules. We would need to discuss it further here. Ericsson points out that we did discuss it in Rel-12 and agreed that the LOEI does not take precedence and we did not change that now. Therefore, the baseline still holds. MediaTek agrees with QC that we will not get consensus to SA2 and leave the decision to them. Vodafone agrees with Ericsson that the current status is that we do not allow the override. Telecom Italia agrees with Vodafone and Ericsson. We should state that baseline and say in addition that there is no consensus to change that. Nokia Networks agrees. QC agrees to the baseline that LOEI does not override RAN rules for radio related aspects. Intel agrees that this baseline is in the SA2 specifications. MediaTek does not think there is a baseline. Broadcom agrees with Intel that the baseline is in the SA2 specifications. DT agrees that we did not change the baseline that LOEI is not allowed to override RAN rules.

=> Postponed

Other

R2-153072 Interaction between RAN rules and Local Operating Environment Information; MediaTek Inc.; discussion; Rel-12; UTRA_LTE_WLAN_interw-Core;
- Vodafone thinks that we discussed these issues earlier and decided that LOEI should not override the result of RAN rules. Vodafone thinks that the intention of the WLAN interworking was to give the network control of the access selection. We should therefore not encourage overriding the specified behaviour. It would make the whole thing untestable. We also don't have similar UE based behaviour for interworking of different 3GPP RATs. TCL wonders how the user preference is taken into account. QC thinks that Rel-12 was about the AS functionality which higher layers can overrule. SA2 thinks that LOEI can also overrule the AS decisions. Broadcom agrees with MediaTek that LOEI can overrule the AS rule. Ericsson agrees with Vodafone that we discussed and agreed all of this. Huawei also agrees. Nokia Networks also agrees with Vodafone. MediaTek does not propose any change to the RAN2 specification. MediaTek would allow SA2 to override the RAN rule decision. Intel agrees with MediaTek that there are issues such as mobility in which case it might be preferable that the UE takes its own decision. DT agrees with Vodafone that the value of the feature would diminish if we allow this to be up to UE implementation. MediaTek thinks that we had the discussion in the past. Vodafone thinks

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that the RAN rules decide on radio related aspects and should not be overridden by higher layers. Sony agrees with MediaTek as far as Rel-12 is concerned. Ericsson clarifies that RAN2 specification is specified in a way that the higher layer procedure is invoked based on RAN rules. But this does not mean that higher layers should override the decision.
- Huawei thinks that we said so far that a UE not configured with any user preference should strictly follow the RAN rules. Now MediaTek seems to suggest weakening this point. Nokia Networks thinks that SA2 wanted to know how to handle the radio related aspects and whether the LOEI may override the RAN rule decision. Broadcom thinks that the metrics currently specified are not sufficient to take a decision. Therefore LOEI should be allowed to override the decision.

=> No consensus that there are scenarios where the UE should be allowed to override the RAN rules based on radio-related conditions as determined by the LOEI
=> Noted
=> Can discuss further. See draft LS in R2-153855

R2-153812 UE Handling of RAN Rules for RAN-assisted WLAN Interworking; QUALCOMM CDMA Technologies; discussion; Rel-12; UTRA_LTE_WLAN_interw-Core;
Not treated

R2-153508 Clarification on cell selection sequence upon leaving RRC_CONNECTED; HTC Corporation; CR; 36.331; 12.6.0; 1880; F; Rel-12; UTRA_LTE_WLAN_interw-Core;
- Nokia Networks thinks that the CR is correct. Huawei agrees. Ericsson wonders whether the CR really results in any change of the UE behaviour. Nokia Networks thinks that without the CR the UE would always release the T350 configuration and hence “if timer T350 is configured” would never be fulfilled.

=> Change cover page: UE might unintentionally release the dedicated parameters even if T350 is configured.
=> Update impact analysis
=> CB: [Joint] An updated CR on cell selection sequence upon leaving RRC_CONNECTED may be provided in R2-153856 CR 1880 R1 (HTC)

R2-153856 Clarification on cell selection sequence upon leaving RRC_CONNECTED; HTC Corporation; CR; 36.331; 12.6.0; 1880 R1 ; F; Rel-12; UTRA_LTE_WLAN_interw-Core;
=> Clarify the Consequences if not approved and Inter-operability
✉ **[91#01][LTE/WiFi] Clarification on cell selection sequence (HTC)**
-Update Consequences if not approved and Inter-operability
=> Intended outcome: Agreed CR to RAN plenary in R2-153917 CR1880 R2

R2-153811 Clarification of Beacon RSSI Encoding; QUALCOMM CDMA Technologies; CR; 36.331; 12.6.0; 1905; F; Rel-12; UTRA_LTE_WLAN_interw-Core;
=> Update impact analysis (consequence if UE/NW implements but NW/UE does not…)
- Nokia Networks agrees with the intention but thinks that the value range requires further thoughts.

=> Discuss the suitable value range
=> Tick “ME” on cover page
=> CB: [Joint] An update CR on Clarification of Beacon RSSI Encoding may be provided in R2-153857 CR1905 R1 (QC)

R2-153857 Clarification of Beacon RSSI Encoding; QUALCOMM CDMA Technologies; CR; 36.331; 12.6.0; 1905 R1; F; Rel-12; UTRA_LTE_WLAN_interw-Core;

R2-153875 Clarification of Beacon RSSI Encoding; QUALCOMM CDMA Technologies; CR; 36.331; 12.6.0; 1905 R2; F; Rel-12; UTRA_LTE_WLAN_interw-Core;
=> CR is agreed

R2-153874 Clarification of Beacon RSSI Encoding; QUALCOMM CDMA Technologies; CR; 25.331; 12.6.0; 5786; F; Rel-12; UTRA_LTE_WLAN_interw-Core;
=> CR is agreed

CSG

R2-153133 SI reading for Open access CSG in shared network; Nokia Networks; discussion; Rel-12; EHNB_enh3-Core;
- Huawei thinks that a CSG capable UE would indicate the cgi-Info but others would not. And that is intended. Nokia Networks thinks that an open CSG does not broadcast a CSG ID. Intel agrees with Huawei and also agrees with Observation 1.

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- Intel thinks that a UE not supporting autonomous gaps and SI reading would never report the PLMN ID list. Nokia Networks assumes that UEs would support this. ALU thinks that one could fist do ANR in order to get the PLMN ID list. Afterwards, it is sufficient that each UE provides the primary PLMN ID. That would allow to unambiguously identifying a cell. Nokia Networks intended to avoid the use of ANR.

=> RAN2 sees no need to change the current behaviour
=> Not agreed

UTRAN-to-EUTRAN HO

R2-153705 UTRAN-to-EUTRAN HO transfer of UE EUTRA capabilities ; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion; Rel-12; TEI12;

- QC supports the proposal in order to address the problem with the large capability containers. Intel would also be OK with this solution but wonders which minimum capabilities the E-UTRAN would have to assume until the capabilities have been obtained. ALU thinks that the same principles as applied for GERAN. Nokia Networks confirms the problem but thinks that the E-UTRAN would not know the UE capabilities and has to assume the minimum capabilities. Huawei thinks that this solution is primarily required for Rel-99 SRBs. Nokia agrees that for common EDCH the problem is not so severe. Samsung wonders whether the limit to 3 kbps applies in all cases. QC clarifies that this is mainly a problem during the call setup where only the 3 kbps SRB is available. QC agrees with Samsung that if it was possible to delay the acquisition of E-UTRA capabilities until after the connection reconfiguration that would also solve the problem. ALU thinks that this will not work if the HO is urgent. QC thinks that in this case re-direction would still be possible.

=> CB: [Joint] Discuss further offline about “UTRAN-to-EUTRAN HO transfer of UE EUTRA capabilities” during the week. (ALU)

- ALU reports that there was not much progress. The Cat-0 issue is not yet resolved but might not be needed either. Some offline discussion will be done and we will come back with an update next meeting.

=> Postponed

R2-153706 Enabling UTRAN to E-UTRAN HO without forwarding UE-EUTRA-Capability; Alcatel-Lucent Telecom Ltd; draftCR; 36.331; 12.5.0; Rel-12; TEI12;
Not treated

5 Joint UMTS/LTE: Rel-13

5.1 WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)

(ACDC-RAN-Core; leading WG: RAN2; REL-13; started: Mar. 15; target: Dec. 15; RP-150662)

Time budget: 0.25 TU

Incoming LSs

R2-153005 Reply LS to S1-151622 = R2-151029 on handling of uncategorised applications in ACDC (C1-152413; contact: Qualcomm); CT1; LS in;

=> Noted

R2-153044 Reply LS on ACDC mechanism; from SA1

- Huawei wonders whether NAS can pass more than one category to AS. LG clarifies that SA1 indicates now that it can be only one category.

=> Noted

R2-153041 LS on ACDC mechanism (C1-153278; contact: LGE); CT1

- LG clarifies that the AS might have to inform NAS that barring was due to ACDC since ACDC is supposed to override ACB. Intel thinks that NAS only needs to know whether the connection was barred but NAS already knows by itself whether an access is subject to ACDC or to ACB. Huawei thinks that currently the AS informs the NAS whether barring was due to EAB or ACB. We should follow that principle here.

=> Discuss further whether NAS needs to be informed.

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=> Postponed

Other

R2-153244 ACDC impacts on AS layer; LG Electronics Inc.; discussion;

Proposal 1:

- Chairman thinks that if we agree this we also say that free-ride cannot be solved. Otherwise, we should apply ACDC also in CONNECTED. Intel agrees. LG thinks that SA1 requirement states that this is only for IDLE. CMCC is somewhat concerned about the free-ride. Ericsson thinks that CT1 is only working on IDLE mode and we should follow this in RAN2.

Proposal 3:

- Intel suggests using a new SIB since the functionality is optional, since it is independent of other barring features. Furthermore, UEs not supporting ACDC would have to re-acquire even if only the ACDC information changes in SIB2. QC wonders how frequent those updates will be. If they are not super frequent, we should use SIB2. Huawei also prefers SIB2. Nokia Networks thinks that also SIB14 could be considered. Nokia Networks thinks it also depends on other design decisions. If the mechanism follows some EAB principles, we might want to put it in SIB14. We should first discuss the other proposals.

Proposal 4, 5, 6:

- TeliaSonera thinks that the requirements say that individual parameters should be possible. QC agrees with the chairman that the requirement seems to be in-line with the LG proposal, i.e., one bit per PLMN but same barring parameters for all. QC thinks that this is what SA1 had in mind. QC would also be fine to allow for a more flexible configuration. Samsung thinks we could then not follow the usual principle of common parameters. Huawei thinks that individual parameters would add more overhead. Huawei and Nokia Networks would be OK with the additional flexibility but it does not seem to be in line with SA1 requirements. Nokia Networks does not see the need for this flexibility.

Proposal 5, 6:

- LG thinks that in order to ensure the increasing barring probability for lower categories, we have to use the probability based barring rather than EAB mechanism. Ericsson thinks that the EAB mechanism or possibly only one bit per category. Intel has a preference for the barring time/factor. Nokia Networks does not have a strong preference among EAB or ACB principle. But a single bit might not be enough. Maybe only the barring factor would be sufficient. Huawei would prefer the EAB mechanism but would prefer to discuss the options further. Ericsson thinks that also the EAB-like bitmap would allow to fulfil the increasing barring probability requirement.

Agreements

1 ACDC feature impacts RRC Connection Establishment, i.e., ACDC is applicable to UEs in idle mode only that are not a member of one or more of Access Classes 11 to 15

2 UE shall acquire the ACDC control information in SIB when UE has configuration of ACDC categories on NAS level.

FFS: ACDC control information including ACDC barring information is broadcast via SIB2.

4 ACDC control information should indicate the PLMNs which are subject to ACDC and provides barring parameters individually for each of them. (This is a working assumption that may be revisited if it causes too much overhead or complication in ASN.1. If we stick to this flexibility we will also inform CT1 and SA1 accordingly)

FFS: Whether to use EAB (bitmap) or ACB (probability/time) scheme

8 System information lists ACDC barring information per ACDC category from the highest ACDC category to the lowest ACDC category.

9 The maximum number of ACDC categories broadcast via system information is 16.

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10 In RRC connection establishment, if NAS layer indicates ACDC category (including "ACDC uncategorized") information and if ACDC barring information is broadcast at a cell, UE RRC applies ACDC barring check. Otherwise, UE RRC applies legacy ACB behaviour.
FFS: Coexistence of ACDC and SSAC, EAB

11 UE RRC performs the ACDC barring check

12 For access attempt of an uncategorized application, UE RRC performs the ACDC barring check by using ACDC barring parameters corresponding to the lowest ACDC category in system information.

=> CBF: An LS to CT1 and SA1 summarizing the ACDC agreements may be provided in R2-153858. The LS should also cover the UMTS discussion later this week (LG)

R2-153858 Draft reply LS to CT1 and SA1 summarizing the ACDC agreements; contact: LG
✓ => The LS to CT1 and SA1 summarizing the ACDC agreements is approved in R2-153876

R2-153112 Coexistence and free-ride issues of ACDC; China Mobile Com. Corporation; discussion;
R2-153119 Discussion on ACDC; HTC Corporation; discussion;
R2-153147 ACDC impacts on RAN; Nokia Networks; discussion;
R2-153179 Discussion on RAN impacts due to ACDC; Huawei, HiSilicon; discussion;
R2-153255 Considerations on signalling of ACDC barring information; Intel Corporation (UK) Ltd; discussion;
R2-153455 ACDC Category handling; NEC Corporation; discussion;
R2-153757 Signalling aspects of ACDC in E-UTRAN; Ericsson; discussion;
Above 7 Tdocs not treated

R2-153087 Discussion on ways to get service when ACDC is applied on a cell; HTC Corporation; discussion;
[Withdrawn]

5.2 SI: Study on Indoor Positioning Enhancements for UTRA and LTE

(FS_UTRA_LTE_iPos_enh; leading WG: RAN1; REL-13; started: June 14; target: Sep. 15; WID: RP-141102)

Time budget: 0.5 TU

Agreed TP for TR 37.857 on "Terrestrial Beacon System" available in R2-152841.

Agreed TP for TR 37.857 on "Indoor Location Improvements utilizing WiFi, BT and Barometric Pressure Measurements" available in R2-152840.

WiFi, BT, Barometric Sensors

R2-153130 Signalling Protocol Options for WiFi, BT and Barometric Sensor Positioning; Qualcomm Incorporated; discussion;

- Intel thinks that we could try to agree on a preferred protocol option in the SI and Intel would like to follow the one with least impact. Therefore Intel would like to exclude the ones with LPPa. NextNav would appreciate if we could narrow down the options in the SI phase. Otherwise, NextNav would be fine to capture the TP. QC thinks that if we want to have a single protocol option, that would be LPPe since it already exists. If we want to do another option, that would always be a second option. Apple would prefer LPP or LPPe over LPPa and a slight preference of LPP over LPPe. Broadcom would also prefer LPP over LPPe. Nokia Networks thinks if LPPe over LPP we should certainly consider that option.
- QC thinks that the corresponding core network interface updates are straight forward once we have concluded on the radio aspects.
- Ericsson has some small comments for the UMTS part and provided them to QC.

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- Ericsson wonders whether any enhancements for UMTS are needed at all. Apple thinks that also UMTS requires these updates. Ericsson thinks it is not that obvious. Intel thinks that in the past we aimed to support any RAT independent solution in all RATs. NextNav thinks that UMTS is still an important aspect. QC thinks that the FCC requirements talk about VoLTE. Huawei would prefer to support it also in UMTS. Ericsson has so far not seen any request from operators. Ericsson thinks that if we introduce it, it would become a mandatory UE requirements. Nokia Networks thinks that it could be decided when the WI is scoped in RAN.
- QC thinks we should also discuss and agree whether we need all three modes (UE based, UE assisted and autonomous)

=> For UMTS: Consider a capability indication
=> For UMTS: Discuss the wording of the request
=> We will aim to agree the updated TP by end of the week
=> CB: [Joint/Positioning] An updated TP on Signalling Protocol Options for WiFi, BT and Barometric Sensor Positioning may be provided in R2-153859 (QC)

- Chairman wonders whether we can exclude or down-prioritize any protocol options. Nokia Networks thinks that LPP+RRC we did only if RAN information was required. This is not the case here and hence we should prefer LPP/LPPe.

=> LPPa+RRC is not a preferred protocol option because no RAN information is required. In those cases, we prefer LPP (or LPPe)

- Nokia Networks thinks that we should just use LPPe for BT/WiFi/Barometric considering that it exists already. QC points out that LPPe is also transported in LPP. QC thinks that RAN5 could possibly define test cases also for LPPe based positioning. But testing for BT and Barometric Sensors could in any case be somewhat difficult. Apple thinks that LPPe is a big specification that cannot be deployed partially. Therefore, it would bring significant implementation complexity. Intel thinks that not all WiFi modes are specified in LPPe. QC disagrees.
- Chairman wonders whether we can exclude any modes (UE based, UE assisted and autonomous). Nokia Networks thinks that if we go for LPPe, this simply depends on what OMA already supports. QC agrees that LPPe supports all three. For LPP we would need at least the UE assisted mode and we could discuss whether we want to support the two others as well)
- Intel wonders whether there would be nothing to be done for RAN2 if we go for LPPe. Chairman understand that this would be the case. Only RAN5 would have to work on test cases. But those would be needed anyway (also for LPP).

=> CB: [Joint/Positioning] Discuss further during this week whether to support LPP or LPPe (NetxtNav)

- NextNav indicates that there was some offline discussion but no clear consensus. Therefore, this aspect is suggested to be sorted out in the normative WI phase.
- ALU thinks that RAN3 was still discussing the LPPa+RRC option that we ruled out. NextNav thinks that there is a related RAN3 discussion and RAN3 might suggest an additional text for that. Apple thinks that the enhanced cell ID mechanisms in RAN3 would not have impact on RAN2. ALU thinks that RAN3 should send their TP to us if it has possible impact to LPPa. Nokia Networks thinks that we could leave it as is and decide later in the WI phase whether we really do anything about this. Or RAN1 cleans it up when compiling the TR.

R2-153859 Signalling Protocol Options for WiFi, BT and Barometric Sensor Positioning; Qualcomm Incorporated; TP for TR;

- Apple would like to add a reference to their document showing the performance of BT and WiFi positioning.

=> Add a reference to the Apple TDoc evaluating WiFi and BT positioning performance
=> With this change the TP is approved in R2-153877

R2-153069 UTRA/E-UTRA Protocol aspects of Indoor positioning enhancements using hybrid Wi-Fi/BT and barometric sensors; Apple Europe Limited; discussion;
Not treated

R2-153123 Text proposals for IMU sensor for indoor positioning; Sony; discussion;

- Nokia Networks thinks that a standalone mode enhancing the location information does not need to be mentioned in our specifications. Sony thinks that the UE could indicate that it used these techniques to improve or determine the current position.

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- Sony thinks that the UE could indicate in location reports (autonomous and UE based) whether it used IMU for computing that location.

=> Clarify that the only impact of IMU is that the UE could indicate in location reports (autonomous and UE based) that it used IMU for computing that location.

=> Update TP provided in R2-153922

R2-153922 Text proposals for IMU sensor for indoor positioning; Sony; pCR;

- Nokia Networks does not consider it necessary to indicate that IMU data was used. Sony thinks that there are such FCC requirements.

=> TP is agreed

R2-153264 Considerations on RAN2 aspects of Indoor Positioning Enhancements; Intel Corporation; discussion;

Not treated

R2-153512 WLAN-aided indoor positioning with FTM; Intel Corporation; discussion;

- QC is fine to add the description but it is already part of WiFi.

=> Can discuss offline during the week whether and how this should be added and an update may be provided in R2-153878

R2-153878 WLAN-aided indoor positioning with FTM; Intel Corporation; pCR;

=> TP is agreed

TBS

R2-153761 Additional details of TBS protocol impacts; NextNav; discussion;

- QC thinks that all of this is only applicable for TBS option 2. For TBS option 1 none of this would be needed. NextNav thinks that also for option 1 there might also be some changes due to the use of unlicensed spectrum. QC clarifies that option 1 would re-use the PRS signal as defined today. Some small changes as e.g. cell ID would need to be made. QC explains that option 1 would just be a transmitter for PRS and any UE supporting OTDOA would also support this.

=> Noted

R2-153762 TP for TR37.857 for TBS Protocol Impacts; NextNav; pCR; 37.857;

- QC thinks that the first table (LTE) would only be applicable for Option 2.

=> Clarify with a note that Table 9.2.1.2-1 applies to TBS Option 2 only.

=> With this change the TP is agreed in R2-153920

5.3 Other Joint Rel-13 WIs

No contributions received.

5.4 Joint LTE+UMTS TEI13 enhancements

Small Technical Enhancements affecting both LTE and UMTS Rel-13 that do not belong to any Rel-13 WI.

Note: A TEI enhancement proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

No contributions received.

6 LTE: Rel-12 and earlier releases

6.1 LTE: Rel-11 and earlier

Corrections and Changes to functionality introduced in Rel-8, 9, 10 and 11!

(LTE-L23, leading WG: RAN2, REL-8, started: Sep. 06, closed: Dec. 08, WID: RP-080747)

(LTE_CA-Core, leading WG: RAN1, REL-10, started: Dec. 09, closed: June 11, WID: RP-100661)

(LTE_UL_MIMO-Core, leading WG: RAN1, REL-10, started: Dec.09, closed: June 11, WID: RP-100959)

(LTE_eDL_MIMO-Core, leading WG: RAN1, REL-10, started: Dec.09, closed: March 11, WID: RP-100196)

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(LTE_Relay-Core, leading WG: RAN1, REL-10, started: Dec. 09, closed: June 11, WID: RP-110911)

(MBMS_LTE_enh-Core, leading WG: RAN2, REL-10, started: June 10, closed: March 11, WID: RP-101244)

(MDT_UMTSLTE-Core, leading WG: RAN2, REL-10, started: Dec. 09, closed: June 11, WID: RP-100360)

(eICIC_LTE-Core, leading WG: RAN1, REL-10, started: March 10, closed: June 11, WID: RP-100383)

(SONenh_LTE-Core, leading WG: RAN3, REL-10, started: March 10, closed: June 11, WID: RP-101004)

(LTE_CA_enh-Core, leading WG: RAN1, REL-11, started: March 11, closed: Mar.13, WID: RP-121999)

(MBMS_LTE_SC-Core, leading WG: RAN2, REL-11, started: June 10, closed: Sep.12, WID: RP-120258)

(LTE_eDDA-Core, leading WG: RAN2, REL-11, started: March 11, closed: Dec.12, WID: RP-120256)

(LCS_LTE-NBPS-Core, leading WG: RAN2, REL-11, started: March 09, closed: June. 13, WID: RP-131259)

(eICIC_enh_LTE-Core, leading WG: RAN1, REL-11, started: March 11, closed: Dec. 12, WID: RP-120860)

(SPIA_IDC_LTE-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec. 12, WID: RP-111355)

(COMP_LTE_DL-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111365)

(COMP_LTE_UL-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111365)

(LTE_TDD_add_subframe, leading WG: RAN1, REL-11, started: March 12; closed: Sep. 12, WID: RP-120384)

(FS_HetNet_eMOB_LTE, leading WG: RAN2, REL-11, started: March 11, closed: Sep. 12, WID: RP-110709)

(LTE_enh_dl_ctrl-Core, leading WG: RAN1, REL-11, started: Dec. 11, closed: Dec. 12, WID: RP-120871)

6.1.1 Control Plane and Common

CA Capabilities

Clarification to number bandwidth classes in a band combination

R2-153354 Correction on Restriction to CA capability signalling; Huawei, HiSilicon; CR; 36.331; 10.17.0; 1867; F; Rel-10; LTE_CA-Core;
=> CR is agreed

R2-153355 Correction on Restriction to CA capability signalling; Huawei, HiSilicon; CR; 36.331; 11.12.0; 1868; A; Rel-11; LTE_CA-Core;
=> CR is agreed

R2-153356 Correction on Restriction to CA capability signalling; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1869; A; Rel-12; LTE_CA-Core;
=> CR is agreed

Non-Contiguous Intra-Band combinations

R2-153510 Issues on intra-band non-contiguous CA signaling; Intel Corporation; discussion; Rel-10; LTE_CA-Core;
Issue 1:

- Huawei thinks that interpretation 1 is correct for the RI bit-width calculation and RAN1 could probably clarify that the same is true for Kc calculation. A UE indicating 2 layer on one carrier and 4 layer on another in the same band, it shall use 2 bit for RI. Intel thinks that during offline discussions many companies did not share that view.
- Huawei refers to an old LS from RAN1 coming in R2-131559. QC thinks it is not clear whether this really refers to the frequency band or rather to a band entry. Ericsson agrees with Huawei but considering that so many companies have a different interpretation, a change may be needed anyway. Samsung thinks that interpretation 1 is the only possible way to interpret this now since it is too late for a change. Chairman wonders what UEs implemented for the soft buffer split. Huawei is not sure but thinks that the applying the same principle for Kc is feasible and should be clarified. Intel thinks that this could be possible but it would also be a change compared to existing specs and it would inefficient. QC thinks that it is a good chance to correct this by introducing explicit signalling from Rel-

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10 onwards and to use that signalling also for intra-band contiguous and for TM3/4. Huawei agrees that explicit signalling will be introduced there but we should not introduce it for non-contiguous if we don't have to. Ericsson would be OK to introduce the explicit signalling for all cases but thinks that we then need also capability signalling for that. Huawei thinks that the handling of legacy UEs and Networks will be difficult to resolve. Samsung thinks that we should first discuss how to resolve the problem for legacy UEs. Chairman wonders whether there can be any legacy UEs considering that problems with Kc determination should have appeared in IODT. QC does not agree with Huawei's interpretation of the RI bit width calculation.

=> CB: [LTE/Capabilities] Discuss further offline the "RI bit width calculation and Kc determination" (Intel)

- Was reported to RAN1 in the context of the intra-band contiguous CA

=> Postponed until RAN1 indicates to us whether they solve it themselves or we need to do anything in RAN2.

Issue 2:

- Nokia Networks points out that RAN4 is discussing a CR to combine these two rows.
- DCM thinks that Intel's proposed interpretation would be good but DCM is afraid that there could be an IODT issue. Huawei agrees with Intel that there is no frequency order in band combination signalling for intra-band non-contiguous CA. Intel thinks that also from UE point of view there is no benefit of supporting one but not the other order.

=> There is no frequency order in band combination signalling for intra-band non-contiguous CA.

R2-153103 Interpretation of intra-band non-contiguous CA capability; NTT DOCOMO, INC., Samsung; discussion; Rel-10; LTE_CA-Core;

R2-153561 Clarification of intra-band non-contiguous CA capability; NTT DOCOMO, INC., Samsung; CR; 36.331; 10.17.0; 1881; F; Rel-10; LTE_CA-Core;

R2-153562 Clarification of intra-band non-contiguous CA capability; NTT DOCOMO, INC., Samsung; CR; 36.331; 11.12.0; 1882; A; Rel-11; LTE_CA-Core;

R2-153564 Clarification of intra-band non-contiguous CA capability; NTT DOCOMO, INC., Samsung; CR; 36.331; 12.6.0; 1883; A; Rel-12; LTE_CA-Core;

Above 4 Tdocs not treated

MIMO parameters in Intra-Band Contiguous CA

R2-153265 Summary of email discussion [90#01][LTE/CA] MIMO/CSI capability for intra-band contiguous CA; Intel Corporation; discussion; Rel-12; LTE_CA-Core, TEI12;

- Intel clarifies that for intra-band contiguous CA we certainly need the explicit signalling since the legacy UE would behave different from a new UE supporting the new capability mechanis.

=> For each CC, the RI bit width is determined according to the configured number of layers signaled by the dedicated signaling.

=> Noted

R2-153266 Additional MIMO/CSI capability for intra-band contiguous CA; Intel Corporation; CR; 36.331; 12.6.0; 1861; F; Revision of R2-152921; Rel-12; LTE_CA-Core, TEI12;

=> Add cover page: Summary shall list explicit signalling

=> Update parameter name and description

=> Use a non-critical extension

- QC thinks that the "number of layers" is no longer part of the CQI configuration. It is used also for other purposes (Kc).

=> Move the configuration to AntennaInfoDedicated

=> CB: [LTE/Capabilities] An updated CR on "Additional MIMO/CSI capability for intra-band contiguous CA" may be provided in R2-153942 (Intel)

=> Need to take into account whether and how to fix the legacy issues (non-contiguous intra-band). Depending on that decision we may have to apply this signalling from Rel-10.

R2-153942 Additional MIMO/CSI capability for intra-band contiguous CA; Intel Corporation; CR; 36.331; 12.6.0; 1861 R1; F; Revision of R2-153942; Rel-12; LTE_CA-Core, TEI12;

=> Parameter name maxLayersMIMO is agreed

✉ **[91#02][LTE/CA] Additional MIMO/CSI capability for contiguous intra-band (Intel)**
-Final check and clarification that the signaling applies to TM9/10 intra-band contiguous
-Based on R2-153942 and R2-153943
=> Intended outcome: Agreed 36.306 and 36.331 CRs to plenary

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R2-153267 Additional MIMO/CSI capability for intra-band contiguous CA; Intel Corporation; CR; 36.306; 12.5.0; 0290; F; Rel-12; LTE_CA-Core, TEI12;
R2-153943 Additional MIMO/CSI capability for intra-band contiguous CA; Intel Corporation; CR; 36.306; 12.5.0; 0290 R1; F; Rel-12; LTE_CA-Core, TEI12;

- Chairman thinks we should aim to get also a conclusion for intra-band non-contiguous and TM3/4 before sending an LS to RAN1. Huawei agrees that this would be nice but thinks we could also involve RAN1 to get further input on the legacy issue (non-contiguous).

R2-153944 [Draft] LS on intra-band contiguous CA and intra-band non-contiguous CA; to RAN1
=> Clarify that the first aspect applies from Rel-12 onwards and that the second problem affects Rel-10 onwards.
✓ => With this change the LS on "intra-band contiguous CA and intra-band non-contiguous CA" to RAN1 is approved in R2-153948

R2-153268 Proposed changes to TS36.212 for additional MIMO/CSI capability; Intel Corporation; discussion; Rel-12; LTE_CA-Core, TEI12;
Not treated

R2-153269 Draft LS on additional MIMO/CSI capability for intra-band contiguous CA; Intel Corporation; LS out; Rel-12; LTE_CA-Core, TEI12;
[Withdrawn]

CA/MIMO – TM3/4

Incoming LSs
R2-153020 LS regarding rank3/4 in TM3 and TM4 for additional UE categories (R4-153907; contact: Nokia Networks); RAN4; LS in; Rel-13; LTE_4Rx_AP_DL-Core;
=> Noted
R2-153023 LS response regarding rank3/4 in TM3 and TM4 for additional UE categories (RP-151113; contact: Nokia Networks); RAN; LS in; Rel-13; LTE_4Rx_AP_DL-Core;
=> Noted

Discussion
R2-153465 Discussion on 4-layer MIMO with TM3 and TM4; Nokia Networks, Huawei, HiSilicon, Samsung, Deutsche Telekom; discussion; Summary of offline discussion on introduction of 4-layer TM3/4 as requested by RAN#68.; Rel-10; TEI10;
Proposal 4:
- Intel wonders why we need to continue the discussion intra-band contiguous. Nokia Networks thinks that for that discussion there was non conclusion. Nokia Networks thinks that they can be separated. Huawei agrees with Nokia Networks that they could be separated.

5c
- Ericsson thinks we should do the signalling as for TM9/10, i.e., per bandwidth class in a band-combination. Huawei agrees to that. QC would like to be able to have the per-CC signalling for intra-band contiguous before Rel-12. Intel thinks we could introduce per-CC

Agreements

1 The signalling to enable 4-layer MIMO with TM3 and TM4 shall be introduced from Rel-10 specifications.

2 The capability signalling is per bandwidth class like the existing signalling for TM9/10. (per-CC for intra-band contiguous will be added in Rel-12 as for TM9/10)

5 The capability signalling does not distinguish TM3 and TM4.

6 Introduce downlink signalling by which the network configures the number of layers to be used per CC (from which the UE derives the RI bit width as well as the soft buffer split (Kc))

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- Nokia Networks thinks that we should send an LS to RAN1. Chairman thinks that we should describe all three cases with agreements and open issues together. Huawei would like to keep them separate. Nokia Networks thinks we could first add TM3/4 and in the next meeting cycle add support for contiguous intra-band CA. And then we could later also consider fixing the intra-band non-contiguous issue. Chairman finds it strange to first add new things before trying to fix existing functionality. DCM agrees with the chairman.

=> CB: [LTE/Capabilities] A draft LS to RAN1 informing them about the agreements on TM3/4. (Nokia Networks)

R2-153921 [DRAFT]LS on decisions regarding rank3/4 in TM3 and TM4 for additional UE; to RAN1, CC: RAN, RAN4; Contact: Nokia Networks

- Intel thinks that this information might not be sufficient for RAN1 to do their corresponding CR. Huawei thinks that it contains all required information.

=> Change to “RAN2 asks RAN1…”

=> Clarify for the last bullet (6) that it is applicable for TM3/4 only

✓ => With this change the LS on decisions regarding rank3/4 in TM3 and TM4 for additional UE; to RAN1, CC: RAN, RAN4 is approved in R2-153931

R2-153321 Support for 4 layer MIMO with TM3 and TM4; Qualcomm Incorporated; discussion; Rel-10; TEI10;
Not treated

CRs

✉ **[91#03][LTE/CA] Support for 4 layer MIMO with TM3 and TM4 (Nokia Networks)**
-Careful check of CRs R2-153951 to R2-153956
=> Intended outcome: Agreed 36.306 and 36.331 CRs to plenary

R2-153608 Signalling for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.331; 10.17.0; 1885; C; Rel-10; TEI10; revised in R2-153951

R2-153951 Signalling for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.331; 10.17.0; 1885 R1; C; Rel-10; TEI10

R2-153609 Signalling for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.331; 11.12.0; 1886; A; Rel-11; TEI10;

R2-153952 Signalling for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.331; 11.12.0; 1886 R1; A; Rel-11; TEI10;

R2-153610 Signalling for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.331; 12.6.0; 1887; A; Rel-12; TEI10;

R2-153953 Signalling for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.331; 12.6.0; 1887 R1; A; Rel-12; TEI10;

=> Change to Cat. C

R2-153611 Capability for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.306; 10.13.0; 0294; C; Rel-10; TEI10;

R2-153612 Capability for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.306; 11.11.0; 0295 R1; A; Rel-11; TEI10;

R2-153613 Capability for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.306; 12.5.0; 0296; A; Rel-12; TEI10;

R2-153956 Capability for 4-layer MIMO with TM3 and TM4; Nokia Networks; CR; 36.306; 12.5.0; 0296 R1; A; Rel-12; TEI10;

=> Change to Cat. C

R2-153322 Introduction of 4 layer MIMO with TM3/4; Qualcomm Incorporated; CR; 36.331; 10.17.0; 1864; F; Rel-10; TEI10;
Not treated

IDC for UL CA

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- DCM thinks that RAN4 will send an LS during the evening and suggests to discuss this topic once the LS is available.

R2-153048 Reply LS on 2UL interband CA problem of GNSS (Contact: DCM)
=> Noted

R2-153345 IDC enhancements for Inter-Modulation Distortion in UL CA; NTT DOCOMO, INC., Nokia Networks; discussion; Rel-11; SPIA_IDC_LTE-Core;
Proposal 1:
- Huawei thinks that protecting GNSS is sufficient. Nokia and Ericsson would like to cover also other RATs. Samsung thinks that RAN4 indicates that they are focusing on GNSS and therefore, Samsung would also like to focus on GNSS. QC thinks that there is not much gain to protect WiFi and BT due to their wide system bandwidth. Nokia Networks thinks that we should also protect the ISM band. QC agrees that also ISM should be protected but the solution should be different. GNSS can be protected efficiently by an enhanced FDM scheme. Nokia Networks thinks that in Rel-11 we always applied FDM unless only TDM is feasible. Ericsson thinks that also a TDM solution would not be very efficient for e.g. WiFi and a simple FDM solution would be preferable for both.

Proposal 2:
- Ericsson thinks it becomes complex if the UE derives all this information and the NW has to determine the aggressor from this victim information. We should rather signal the aggressor (LTE) carrier.
- QC thinks that the UE knows that/when GNSS is to be used. Then the UE should indicate the problem. At all other times, the carriers can be used as normally.
- QC indicates that different UEs may suffer differently from UL CA when trying to do GNSS. Ericsson thinks that this is the problem: If the UE just indicates that it does GNSS, the NW does not know which UL carrier(s) is problematic for this particular UE. Ericsson thinks that in Rel-11 we just indicated the problematic LTE carrier. Now we need to indicate the problematic carrier combinations but no additional granularity or side information. QC thinks that one could just disable selected PRBs rather than entire carriers. Ericsson does not think this additional granularity is needed. Chairman thinks that QC indicated above that GNSS is used rarely and hence this additional granularity would only help in the rare cases when GNSS is used. Nokia Networks thinks that additional granularity in frequency domain might help. DCM thinks that then the current IDC could be sufficient. Ericsson thinks that the eNB does not know which carrier of a band combination if causing a problem. Huawei thinks that we only need a new solution for GNSS if we want to use the additional frequency domain granularity. If we don't want that, the current IDC is sufficient. The UE could just indicate both carriers and the NW could derive that the combination is problematic. Huawei thinks that there is no ambiguity from an eNB point of view.
- QC thinks that also operators don't want to use TDM.
- Telecom Italia would like to have finer granularity in frequency domain.

=> CB: [LTE/IDC] Can discuss further offline about "IDC enhancements for Inter-Modulation Distortion in UL CA" whether any enhancement is needed. (DCM)
- DCM suggests introducing victim type information as well as problematic UL band combinations in accordance with offline discussions.
- Ericsson clarifies that the need for new DRX cycles in the indication could be discussed in the next meeting.

=> Noted

R2-153733 Signalling for UL-CA IDC interference issue; Ericsson; discussion; Rel-11; LTE_CA-Core;
R2-153800 A simplified IDC enhancement for UL inter-band CA IMD interference to GNSS; QUALCOMM India; discussion; Rel-11; SPIA_IDC_LTE-Core;
Above 2 Tdocs not treated

CRs

R2-153346 IDC enhancements for Inter-Modulation Distortion in UL CA; NTT DOCOMO, INC.; CR; 36.331; 12.6.0; 1865; B; Rel-13; SPIA_IDC_LTE-Core, TEI13;
Not treated

R2-153838 CR for IDC signalling enhancement for UL CA; Ericsson; draftCR; 36.331; 12.5.0; Rel-12; SPIA_IDC_LTE-Core;
Not treated

R2-153872 CR for IDC signalling enhancement for UL CA; Ericsson; CR 1911; 36.331; 12.5.0; Rel-12; SPIA_IDC_LTE-Core;

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- Samsung wants only the victim system information. Ericsson points out that RAN4 indicated that also other systems will be affected. Ericsson would therefore prefer a generally applicable solution as also targeted in Rel-11. If we drop the band combination info, we also have to remove the WiFi and BT indications.

=> Change to "on one or more supported UL CA combination" (2 places)
=> Add capability signalling
=> Clarify that this may only be configured in addition to the existing IDC indication
=> Cat. C

- QC would like to have this from Rel-11. AT&T agrees. Nokia Networks thinks that it is sufficient to add this to Rel-12. Samsung agrees with Nokia Networks. Huawei also thinks that Rel-12 is sufficient. QC thinks it is important in order to be able to deliver Rel-11 CA. Huawei thinks that this is just an optimization. Ericsson does not consider it an optimization but rather as important addition. Otherwise, many bands are basically unusable in combination with CA. Huawei does not agree and thinks that Rel-11 UEs would have to use TDM while the UE uses GNSS. QC thinks that the TDM solution requires shutting down the carrier 50% of the time. Ericsson thinks that this would be as bad as disabling the entire carrier. DCM would also support this from Rel-11.

=> The feature should be introduced from Rel-11

✉ **[91#05][LTE/IDC] One week: IDC signalling enhancement for UL CA (Ericsson)**
-Final check of CR in R2-153872
-Provide additional CRs for Rel-11
=> Intended outcome: Approved Rel-11 and Rel-12 CRs for 36.331 and 36.306 to RAN plenary

R2-153790 In-Device Coexistence for UL inter-band CA interference due to intermodulation; QUALCOMM India; CR; 36.331; 11.12.0; 1903; F; Rel-11; SPIA_IDC_LTE-Core;
Not treated

Transport Block Size for TM9/10 with MIMO

R2-153492 TBS handling of DL transmission modes with 4/8 CSI-RS antenna ports; NTT DOCOMO, INC.; discussion; Rel-10; LTE_eDL_MIMO-Core;

- DCM indicates that RAN1 might inform us in the next meeting whether and what they decided for this topic.

=> Postponed (until RAN1 provides corresponding input)

CA - PCIs

R2-153392 Blacklisted PCIs in Carrier Aggreation; Nokia Networks; discussion; Rel-10; LTE_CA-Core;

- LG disagrees with Nokia Networks and thinks that their "option 2" is what the specification requires. Intel agrees with LG. Ericsson thinks the proposal is difficult to understand. Ericsson would like to have option 1 but agrees that the specification text is not entirely clear. QC thinks that a black listed neighbour cell should not be measured and hence it will not be reported.

=> Should check further offline
=> CB: [LTE/Measurements] Come back to "Blacklisted PCIs in Carrier Aggregation" (Nokia Networks)

- Nokia Networks thinks that companies expressed the view offline that option 2 is the correct interpretation.

=> RAN2 confirms that option 2 is the correct interpretation.
=> Noted

NS-Values

Void additionalSpectrumEmissionPCell in 36.306

R2-153064 Remove support of additionalSpectrumEmissionPCell; HTC Corporation; CR; 36.306; 10.13.0; 0285; F; Rel-10; LTE_CA-Core;
=> CR is agreed

R2-153065 Remove support of additionalSpectrumEmissionPCell; HTC Corporation; CR; 36.306; 11.11.0; 0286; A; Rel-11; LTE_CA-Core;
=> CR is agreed

R2-153066 Remove support of additionalSpectrumEmissionPCell; HTC Corporation; CR; 36.306; 12.5.0; 0287; A; Rel-12; LTE_CA-Core;

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=> CR is agreed

MFBI and additionalSpectrumEmission

R2-153679 Discussion on additionalSpectrumEmission; HTC Corporation; discussion; Rel-10; LTE_CA-Core;

- Intel agrees with the issue identified in the paper and would prefer option 1 as it would be consistent with what agreed earlier and it does not introduce backwards compatibility issues. Samsung agrees with Intel.

=> When entering RRC Connected (from IDLE) while being in a cell, the UE shall apply additionalSpectrumEmission acquired from SIB2 of that cell. Upon receiving an RRCConnectionReconfiguration including mobilityControlInfo the UE applies the additionalSpectrumEmission received therein (until going to IDLE).

- Intel clarifies that this was the behaviour we had until last meeting cycle. We then changed the behaviour unintentionally, and by this change now fix it again to what it used to be since a long time before the recent change.

=> Noted

R2-153686 Correction to additionalSpectrumEmission – Option 1; HTC Corporation; CR; 36.331; 10.17.0; 1896; F; Rel-10; TEI10, LTE_CA-Core;

=> Add a reference to the CR that introduced the unwanted behaviour in the previous meeting.

- Intel thinks that the change in 5.2.2.9 is not needed. The bullet "- *if in RRC_CONNECTED while T311…*" is only applicable for a UE that enters a cell via handover. A UE entering that camped in the cell while in IDLE, would still apply the value in SIB2.

=> CB: [LTE] An updated CR on "Correction to additionalSpectrumEmission" covering only the second change may be provided in R2-153923 CR 1896 R1 (Rel-10) (HTC)

R2-153923 Correction to additionalSpectrumEmission – Option 1; HTC Corporation; CR; 36.331; 10.17.0; 1896 R1; F; Rel-10; LTE_CA-Core;

=> CR is agreed

R2-153924 Correction to additionalSpectrumEmission – Option 1; HTC Corporation; CR; 36.331; 11.x.x; 1907; A; Rel-11; LTE_CA-Core;

=> CR is agreed

R2-153925 Correction to additionalSpectrumEmission – Option 1; HTC Corporation; CR; 36.331; 12.x.x; 1908; A; Rel-12; LTE_CA-Core;

=> CR is agreed

R2-153692 Correction to additionalSpectrumEmission – Option 2; HTC Corporation; CR; 36.331; 10.17.0; 1897; F; Rel-10; TEI10, LTE_CA-Core;

R2-153698 Correction to additionalSpectrumEmission – Option 3; HTC Corporation; CR; 36.331; 10.17.0; 1898; F; Rel-10; TEI10, LTE_CA-Core;

Above 2 Tdocs not treated

Multiple NS/P-max values

R2-153460 Multiple NS/P-max handling; Nokia Networks; discussion; Rel-9; TEI9;

- Nokia Networks indicates that RAN4 has discussed this and might send an LS soon.
- Nokia indicates that the consequence of the first proposal would be that all combinations of additionalSpectrumEmission + Pmax would be in SIB1. The legacy additionalSpectrumEmission would of course remain also in SIB2.
- Intel wonders why we need to add it in Rel-9. So far the capability signalling for the supported NS values was introduced in Rel-10. Nokia Networks indicates that the LS indicated Rel-9.

=> CB: [LTE] Postponed until RAN4 provided input on "Multiple NS/P-max handling" (Nokia Networks)

R2-153049 Reply LS on NS values in system information broadcast; from RAN4; Contact: Ericsson [Late]

=> Noted

- Nokia Networks points out that during offline discussions it was discovered that Pcompensation is affected. So far Pcompensation is always 0. Therefore, one might only

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need Pmax when starting to transmit and if so, we don't need to move Pmax into SIB1. But if Pcompensation is actually used in the future then it becomes more complex than what we agreed to earlier this week. Ericsson thinks that could keep it simple. But then the NW would always have to set the Pmax to the lowest power class value, i.e., not support higher power class UEs in such cells using multiple NS values.

Working Assumption

1 The network may indicate multiple pairs of additionalSpectrumEmission and P-max in SIB2. The legacy value present in SIB2 is not listed in the new list.

2 Introduce an additional capability bit by which a UE indicates that it understands these additional value pairs in SIB2. Such a UE shall also provide the capability indicating the additional NS values that it supports.

3 Introduce from Rel-10

FFS how many additional NS values are needed.
FFS how to sort out the relation to MFBI

=> CRs postponed to next meeting

R2-153468 Introduction of Multiple NS and Pmax; Nokia Networks; CR; 36.331; 9.18.0; 1874; B; Related to R2-153460; Rel-9; TEI9;
R2-153469 Introduction of Multiple NS and Pmax; Nokia Networks; CR; 36.331; 10.17.0; 1875; B; Related to R2-153460; Rel-10; TEI9;
R2-153470 Introduction of Multiple NS and Pmax; Nokia Networks; CR; 36.331; 11.12.0; 1876; A; Related to R2-153460; Rel-11; TEI9;
R2-153471 Introduction of Multiple NS and Pmax; Nokia Networks; CR; 36.331; 12.6.0; 1877; A; Related to R2-153460; Rel-12; TEI9;
Above 4 Tdocs postponed

MDT

R2-153132 Discussion on MDT accessibility measurement; Qualcomm Incorporated; discussion; Rel-11; TEI11;
- QC has observed problems with the RAN5 test cases since those mandate the UE to include this field. Intel, DCM and Ericsson thinks that the core specification is correct and we should adjust the test specification instead. QC agrees with that and points out that the test case is strange in the sense that it sends only the contention resolution MAC CE but not the corresponding RRC messages.

=> RAN2 confirms that the specified core behaviour is intentional.
=> Noted

VoLTE Establishment Cause

R2-153213 Establishment Cause for VoLTE calls; Nokia Networks; discussion; Rel-10; TEI10;
Mobile Terminated case:
- Vodafone thinks that for terminated calls there is already a paging priority. Why can that not be used? Nokia Networks points out that the UE would not reflect this priority when performing the access triggered by the priority paging. Ericsson agrees that the existing paging priority could be used. DCM thinks that the priority paging is only used by the eNB to decide whether or not to discard a paging record coming in from the CN. The paging priority is not reflected by the UE in its UL access. However, if the eNB discards all low priority paging, it can be sure that all MT accesses are of high priority. Therefore, DCM thinks that nothing else is needed for terminating calls. Huawei agrees with DCM but thinks that the priority paging as such will not help the NW to understand that an uplink access is for VoLTE or in general higher priority. Nokia Networks thinks that the principle outlined by DCM would be quite extreme since it requires discarding normal priority paging. LG agrees with Vodafone and DCM for the mobile terminated call.

Mobile originating case:

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- LG thinks that we discussed this earlier and concluded that ACB should be used in combination with ACB-Skip for VoLTE. Vodafone would support a new cause value for originating VoLTE calls. Nokia Networks thinks that the cause value would avoid the need for SIB updates and for the "heavy" ACB. Ericsson also sees some benefits with this cause value. Intel wonders why we need yet another solution.
- ALU wonders how this would help for UEs in RRC Connected if intended to be used in particular in situations where the NW is not highly overloaded.
- Intel wonders how a legacy NW would treat an unknown cause value. Ericsson thinks that we discussed this earlier and concluded that a NW would ignore an unknown cause value and not trigger any special action. Huawei agreed with Ericsson that we discussed this earlier and concluded that NWs would not reject the access.
- ALU thinks that the network can anyway handle non-background traffic as needed even without the new establishment cause. Huawei thinks that the NW may be limited in terms of the number of CONNECTED UEs and then needs to know which attempts are for VoLTE.
- Vodafone thinks that this could be introduced from Rel-13.
- DCM wonders which other services we want to indicate in the establishment cause. Now we discuss VoLTE but we might discuss others. LG thinks that we might then also have to consider the cause value in ACB-Skip. Vodafone thinks we should try to keep it simple similar to what we have in UMTS. Nokia Networks thinks that we need this only for VoLTE but not for video or SMS. DT is not against this but wonders why only from Rel-13. ALU thinks that UMTS was quite different since every service had its own channel realization. Here, we have a shared channel and it is sufficient to differentiate at a later point in time.
- Ericsson thinks could consider re-using the call type for ACB-skip for VoLTE and then introduce this correspondingly in Rel-12. Ericsson explains that the establishment cause is determined by a table in CT1 specs and we should at least think that might be sensible and simple from CT1 point of view. LG is concerned about the introduction of a new cause value and thinks that ACB is sufficient.

=> CB: [LTE/VoLTE] Can discuss further offline about "Establishment Cause for VoLTE calls" (Nokia Networks)

- After offline discussions Nokia Networks reports that focus should be on the MO case. One could consider Msg3 or Msg5.

=> Noted

✉ **[91#20][LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls (Nokia Networks)**
-Discuss in which message to include the indication
=> Intended outcome: CRs to the next meeting

R2-153215 Addition of establishment cause for mobile-originating VoLTE calls; Nokia Networks; CR; 36.331; 10.17.0; 1856; C; Rel-10; TEI10;

R2-153218 Addition of establishment cause for mobile-originating VoLTE calls; Nokia Networks; CR; 36.331; 11.12.0; 1857; A; Rel-11; TEI10;

R2-153219 Addition of establishment cause for mobile-originating VoLTE calls; Nokia Networks; CR; 36.331; 12.6.0; 1858; A; Rel-12; TEI10;

Above 3 Tdocs not treated

SON & ANR

R2-153310 Minor corrections on SON measurements; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion; Rel-11; LTE-L23, TEI11;

=> RAN2 confirms that ability to perform SON measurement such as reportStrongestCells and reportStrongestCellsForSON is not influenced by number of neighbouring cells configured in the measurement object.

=> Noted

=> CB: [LTE/SON] A 36.331 CR with the second proposal may be provided in R2-153926 CR 1909 (ALU)

R2-153926 Minor corrections on SON measurements; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion; Rel-11; LTE-L23; 36.331; CR 1909

=> Change "IRAT" to "Inter-RAT"

=> With this change the CR is agreed in R2-153960 CR1909 R1

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R2-153632 Clarification on (UMTS) cells the UE should report upon reportStrongestForSON and reportCGI; Samsung; CR; 36.331; 12.6.0; 1890; F; Rel-12; SONenh_LTE-Core;
- Intel thinks that also cells which are in the NCL should be reported upon reportStrongestForSON. Samsung thinks the main intention is to find and add missing cells and hence there is no need to report known cells. Intel thinks that in section 5.1.1 there is a note indicating that for SON purposes listed and detected cells should be reported. Nokia Networks agrees with Intel. Beyond that maxReportCells and reportAmount that indicate that only the serving cell may be excluded from the SON report. ALU thinks that the UE is only allowed to report one cell and hence the behaviour described by Intel and Nokia would make it difficult to detect new cells for SON.

=> The currently specified behaviour is that any cell may be reported no matter whether it is in the NCL or not.
=> This behaviour is the same for the two cases of reportStrongestCellsForSON and reportCGI and therefore there is no need for clarification in the specification.
=> not agreed

R2-153794 ANR in case of MFBI; Huawei, Bell Mobility, HiSilicon; discussion; Rel-8; TEI8;
- ALU thinks that for X2 it is already handled by X2 configuration. ALU thinks that also for S1 one should consider a NW based solution in RAN3. Huawei wonders how a NW based solution would look like. ALU thinks that a similar means as for X2 could be considered for S1. QC agrees with ALU. ANR is supposed to provide information allowing the NW to identify the cell unambiguously. The intention is not that the UE provides the entire cell configuration. Samsung agrees with ALU. Nokia Networks would be interested in such enhancement of ANR. Ericsson would also support the addition suggested by Huawei. ALU agrees with QC that ANR should just ensure that the NW is informed about the other cell. The rest should be done in the NW. We should at least ask RAN3. Huawei could accept sending an LS to RAN3. Intel also has some concerns regarding the discussed solution. Intel thinks that usually all neighbouring cells support the same MFBI cells.

=> Noted
=> CB: [LTE/ANR] A draft LS to RAN3 on ANR in case of MFBI may be provided in R2-153927 (Huawei)

R2-153927 Draft LS on ANR in case of MFBI; Contact: Huawei; to RAN3
✓ => The LS on ANR in case of MFBI to RAN3 is approved in R2-153959

R2-153796 ANR in case of MFBI; Huawei, Bell Mobility, HiSilicon; CR; 36.331; 12.6.0; 1904; F; Rel-12; TEI12;
Not treated

MBMS

R2-153511 Clarification to idle mode camping for MBMS reception; Intel Corporation; discussion; Rel-9; MBMS_LTE;
- Nokia Networks thinks that this list does not enforce any mandatory requirement for the UE. Intel considers it as a pre-condition that has to be fulfilled.
- Huawei thinks that the current text is correct. It does not require that the UE camps on that cell. It just has to camp on a cell.
- QC thinks it is also clear from the definition of a barred cell. And QC does not see any ambiguity.
- Intel thinks that in the last meeting we agreed that a UE that has to camp on a cell in order to receive MBMS from that cell has to consider the barring. If the cell is barred, the UE shall not camp on that cell. So, in that context, camping on a cell requires camping on that cell.

=> No need to clarify.
=> Noted

EPDCCH

R2-153477 Correction on the reference of EPDCCH; Huawei, HiSilicon; CR; 36.331; 11.12.0; 1878; F; Rel-11; LTE_enh_dl_ctrl-Core;
- Intel clarifies also other changes are needed for this field description since it also applicable PUCCH format 3.

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- Intel points out that the reference would only apply for FDD. For TDD another section is applicable. We should rather refer to section 10.1.

=> Change to "PUCCH format 1a, 1b and 3 resource starting offset for the EPDCCH set. See TS 36.213 [23, 10.1]."
=> Update cover page accordingly
=> With this change the CR is agreed in R2-153929 CR 1878 R1

R2-153478 Correction on the reference of EPDCCH; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1879; A; Rel-12; LTE_enh_dl_ctrl-Core;
=> With the same change the CR is agreed in R2-153930 CR 1879 R1

MBMS

R2-153847 MSI with zero length; Samsung; discussion; Rel-13; MBMS_LTE_enh-Core;
[Late]

- Nokia Networks wonders whether the specification prevents setting the L field to 0. Samsung explains that it is clear from the statement that "each subheader corresponds to either a MAC SDU, a MAC control element or padding". Nokia Networks wonders whether we should make it instead more clear in the specification.
- ZTE would like to check this further for fields other than MSI. Samsung thinks that we should clarify it for all MAC CEs. If there is ambiguity, we need to resolve it for all. Samsung does not see any case where it could make sense to include the MAC subheader but set the L field to 0. LG agrees that it is a strange PDU format but there is no fundamental problem. If we think that this is an error case, we have to add something to the error handling section.
- QC thinks that if there are no services there is actually no need to include the MAC CE. Samsung thinks that it is anyway not a valid MAC PDU format.
- LG thinks that the MSI can have 0 byte. For that case, the sentence "each subheader corresponds to either a MAC SDU, a MAC control element or padding" would still be correct.
- Samsung wonders whether everybody agrees that the MAC subheader is not needed if there is no ongoing service.

=> Postponed. Discuss until next meeting whether this PDU format with L=0 is allowed. If it is not allowed, discuss whether there is a need to define error handling.

Withdrawn

R2-153320 UL64QAM configuration for release-12 category UEs; Qualcomm Incorporated; CR; 36.331; 12.6.0; 1863; F; Rel-12; TEI12;
[Withdrawn]

6.1.2 User Plane

The documents in this AI treated in the UP session. (See Annex G)

R2-153791 Correction on Type 2 PH reporting; Intel Corporation; CR; 36.321; 12.6.0; 0799; F; Rel-12; LTE_CA-Core;

6.2 LTE: Rel-12

6.2.1 WI: Dual Connectivity for LTE (SCE)

(LTE_SC_enh_dualC-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Dec.14, WID: RP-141797)

TR of corresponding SI: 36.842

6.2.1.1 Dual Connectivity – Control Plane

R2-153629 Small corrections concerning RadioResourceConfig; Samsung, Intel; CR; 36.331; 12.6.0; 1889; F;

- QC supports the CR

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=> The CR is agreed

R2-153730 Correction to SCG reconfiguration; QUALCOMM India; CR; 36.331; 12.6.0; 1902; F;
=> Include CR number on cover page
- After further offline discussion QC explains that the CR is not needed and the current specification is correct. Therefore, QC withdraws the CR.
=> R2-153730 are not agreed.

R2-153932 Correction to SCG reconfiguration QUALCOMM India CR 36.331 12.6.0 1902 1 F Rel-12 LTE_SC_enh_dualC-Core
[Withdrawn]

6.2.1.2 Dual Connectivity – User Plane

No contributions received.

6.2.2 WI: Small Cell Enhancements – Physical Layer

(LTE_SC_enh_L1-Core, leading WG: RAN1, REL-12, started: Dec.13, **closed**: Dec.14, WID: RP-132073)

No contributions received.

6.2.3 WI: LTE Device to Device Proximity Services - Radio Aspects

(LTE_D2D_Prox-Core, leading WG: RAN1, REL-12, started: Mar.14, **closed**: Mar.15, WID: RP-142043)

RAN1 TR 36.843 on D2D

6.2.3.1 Control Plane and Common

Critical Extension

R2-153633 Handling of (SL) field critically extended in release; Samsung; discussion;
=> Proposals are agreed (see CR)

R2-153634 Introducing general handling and guidelines concerning critical extensions within a release; Samsung; CR; 36.331; 12.6.0; 1891; F;
- ALU thinks we could describe in section A.4.2 possible cases in which “this is not possible”.
=> Consider describe in section A.4.2 possible cases in which “this is not possible”. Check e.g. what is captured for message extension.
- ALU wonders whether we need to change the section heading which currently mentions “messages”
=> CB: [LTE/ASN.1] An updated CR may be provided in R2-153933 CR1891 R1 (Samsung)

R2-153933 Introducing general handling and guidelines concerning critical extensions within a release; Samsung; CR; 36.331; 12.6.0; 1891 R1; F;
=> CR is agreed

Sidelink Terminolgy

R2-153270 Sidelink terminology alignment in TS 36.300; Intel Corporation, Qualcomm Incorporated; CR; 36.300; 12.6.0; 0786; F; Revision of R2-152153;
=> Change to “group destination ID” to reflect the discussion in the UP room.
- LG thinks we should remove “direct”. Intel thinks that RRC uses “sidelink direct communication” in a lot of places. Ericsson would also suggest to keep it as is (with “direct”).
- Nokia Networks finds the definitions “Sidelink direct communication: AS communication…” and “Sidelink direct discovery: An AS procedure…” confusing. Ericsson agrees with the definitions proposed by Intel.
=> Change to “Sidelink direct communication: AS functionality enabling ProSe Direct Communication as defined in TS 23.303 [62], between two or more nearby UEs, using E-UTRA technology but not traversing any network node”

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=> Change to “Sidelink direct discovery: AS functionality enabling ProSe Direct Discovery as defined in TS 23.303 [62], using E-UTRA technology but not traversing any network node.”
=> Correct in 23.10.1 the occurrences of “Sidelink Control” to “Sidelink Control Information”
=> Change section name to “23.10.3.2 Resource Pool for Sidelink Data”
=> CB: [LTE/ProSe] An updated CR may be provided in R2-153934 CR0786 R1 (QC)

R2-153934 Sidelink terminology alignment in TS 36.300; Intel Corporation, Qualcomm Incorporated; CR; 36.300; 12.6.0; 0786 R1; F; Revision of R2-153270;
- Nokia Networks would like to check whether “Group Destination ID” is in-line with the RAN1 specifications. Intel confirms that it is like this in RAN1 specifications and that companies agreed in the UP session to adjust stage-2 accordingly. Ericsson thinks that “Group Destination ID” is not a good name but would be fine to leave it like that.

=> CR is agreed

R2-153271 Sidelink terminology alignment in TS 36.304; Intel Corporation, Qualcomm Incorporated; CR; 36.304; 12.5.0; 0273; F; Revision of R2-152154;
=> Apply same definitions as agreed for 36.331 CR.
=> Correct heading of 11.2
=> Remove occurrences of “for ProSe”
=> CB: [LTE/ProSe] An updated CR may be provided in R2-153935 CR0237 R1 (QC)

R2-153935 Sidelink terminology alignment in TS 36.304; Intel Corporation, Qualcomm Incorporated; CR; 36.304; 12.5.0; 0273 R1; F; Revision of R2-153271;
=> CR is agreed

R2-153958 Sidelink terminology alignment in TS 36.331; Intel Corporation, Qualcomm Incorporated; CR; 36.331; 12.6.0; 1912; F;
- Ericsson and Nokia Networks would like to check this a bit more carefully to avoid any mistakes

✉ **[LTE/ProSe] One week: Terminology alignment (Intel)**
-Final check of CR in R2-153958
=> Intended outcome: Agreed 36.331 CR to plenary in R2-153961 CR1912 R1

Capabilities

R2-153227 Discussion on UE capabilities of sidelink communication and discovery; Huawei, HiSilicon; discussion;
- QC thinks that the number of soft channel bits can be derived from the lowest code rate and the other channel parameters. Intel thinks that RAN1 has already discussed this. Chairman would expect RAN1 to send us an LS with the value which we can then put into 36.306. No need that we send them an LS for that.

=> Noted

R2-153229 Corrections on UE sidelink capabilities in TS 36.306; Huawei, HiSilicon; CR; 36.306; 12.5.0; 0289; F;
=> Change the captions of the tables and the text above to also cover “transmission”
=> Discuss further offline
=> CB: [LTE/ProSe] An updated CR with this change may be provided in R2-153936 CR0289 (Huawei)

R2-153936 Corrections on UE sidelink capabilities in TS 36.306; Huawei, HiSilicon; CR; 36.306; 12.5.0; 0289 R1; F;
=> CR is agreed

R2-153398 Corrections on UE sidelink capabilities in TS 36.306; Huawei, HiSilicon; CR; 36.306; 12.5.0; 0291; A;
[Withdrawn]

R2-153401 draft LS on sidelink capabilities; Huawei; LS out;
Not treated

Overlapping resources in commRxPool

R2-153233 Issues on reception of sidelink communication; Huawei, HiSilicon; discussion;

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- Ericsson does not consider it necessary to capture the case of bad network implementation. ZTE agrees with Ericsson that the observation is correct but no need to capture this in the specification. CATT also agrees with Ericsson. Huawei thinks that for the pre-configuration there was a corresponding note added. ZTE thinks that this is under the control of the eNB. Huawei thinks that also for pre-configuration the NW is in control.

=> Observation is correct but no need to capture this in the specification.
=> Noted

R2-153234 Corrections on configuration of resource pools in SIB18; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1859; F;
=> Not agreed

R2-153400 Corrections on configuration of resource pools in SIB18; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1871; A;
[Withdrawn]

Other

R2-153708 Sidelink discovery related corrections; Nokia Networks; CR; 36.331; 12.6.0; 1900; F;
=> CR is agreed

6.2.3.2 User Plane

Documents in this agenda item treated in the UP session. (See Annex G)

Including output of [90#26][LTE/ProSe] Rel-13 SL BSR trigger and cancellation (Huawei)

R2-153230 Corrections for STCH in 36.322; Huawei, HiSilicon; CR; 36.322; 12.2.0; 0108; F;
R2-153231 Report of email discussion on sidelink BSR; Huawei, HiSilicon; discussion;
R2-153272 Corrections to Sidelink in MAC; Intel Corporation; CR; 36.321; 12.6.0; 0785; F;
R2-153325 Correction on Sidelink BSR transmission; Innovative Technology Lab Co.; CR; 36.321; 12.6.0; 0787; F;
R2-153397 Corrections for reporting and cancellation of SL BSR; Huawei, HiSilicon; CR; 36.321; 12.6.0; 0789; F;
R2-153399 Corrections for STCH in 36.322; Huawei, HiSilicon; CR; 36.322; 12.2.0; 0111; A;
R2-153519 Miscellaneous corrections on Sidelink; ASUSTEK COMPUTER (SHANGHAI); CR; 36.321; 12.6.0; 0790; F;
R2-153662 Corrections for reporting and cancellation of SL BSR; Huawei, HiSilicon; CR; 36.321; 12.6.0; 0795; F;
R2-153709 Events that trigger sidelink BSR; Nokia Networks; CR; 36.321; 12.6.0; 0796; F;
R2-153752 Clarification of cancellation of sidelink BSR; Ericsson; CR; 36.321; 12.6.0; 0797; F;
R2-153774 Corrections on Prose BSR Report and SL MAC CE; ZTE; CR; 36.321; 12.6.0; 0798; F;

Late or Withdrawn

R2-153232 Corrections for reporting and cancellation of SL BSR; Huawei, HiSilicon; CR; 36.321; 12.6.0; 0784; F;
[Withdrawn]

6.2.4 WI: Further MBMS Operations Support for E-UTRA

(MBMS_LTE_OS-Core, leading WG: RAN2, REL-12, started: Sep.13, **closed**: Dec.14, WID: RP-140282)

No contributions received.

6.2.5 WI: Network-Assisted Interference Cancellation and Suppression

(LTE_NAICS-Core, leading WG: RAN1, Rel-12, started: Mar 14, **closed**: Dec.14, WID: RP-140519)

Inlcuding output of [90#22][LTE/NAICS] NAICS Capability Signalling (Nokia Networks)

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R2-153134 Report of email discussion [90#22][LTE/NAICS] NAICS Capability Signalling; Nokia Networks; report; Report of e-mail discussion [90#22];

- MediaTek agrees with Proposal 1 and 2. Samsung understands that we should clarify that the UE shall not reject such a configuration but otherwise, there are no requirements for the UE. Chairman wonders whether it is good to move away from the principle that the NW configuration has to be within the UE capabilities. QC thinks that it is good to configure NAICS for more carriers since the NW can e.g. provide NAICS information for all carriers and UE uses it for the ones being activated. QC also thinks that it will simplify NW implementation since it does not need to consider the NAICS capabilities at all. Samsung tends to agree that we have the general principle that the configuration has to be within the UE capabilities. We have one exception for measurements but that led to numerous discussions on the usefulness and many companies indicated that there seems little sense in configuring more than the UE is known to support. Huawei also tends to agree that we should stick to the existing principle. Nokia Networks also agrees with Huawei and Samsung. Intel agrees with Nokia Networks and Samsung that the NAICS configuration should be within the limits allowed by the UE capabilities. QC disagrees that this is different from other configurations as it is just assistance information. Nokia Networks thinks that depending on whether or not the UE applies NAICS, the CQI computation may be done differently. The NW needs to know this and will therefore only provide NAICS in accordance with UE capabilities so that it knows on which CCs the UE applies NAICS. MediaTek thinks that the eNB does not need to know whether NAICS is applied. Huawei wonders why we have capabilities at all if the NW is not supposed to acknowledge them. QC agrees with MediaTek that the NW does not need to know whether the CQI was computed with or without NAICS. MediaTek thinks that the CQI will anyway vary a lot and the eNB will not know whether it varies due to NAICS being (not) applied or due to fading. MediaTek thinks that providing it for many carriers will allow the UE to use it for carriers dynamically. MediaTek thinks that the UE might not be able to do NAICS for a carrier even though the eNB provides NAICS information for that carrier. QC and MediaTek disagree that “In accordance with the existing principles the network configures NAICS assistance information only in accordance with the UE capabilities”. Chairman thinks that this is the current status and there seems to be no consensus to change that.

=> No consensus that NAICS assistance information may be provided for more CCs that what the UE supports according to the UE capabilities.

Agreements

1 Clarify in 36.331 that NAICS only applies for full carrier bandwidth.

- Nokia Networks thinks we could clarify that the UE is not allowed to provide a more restrictive subset in the UE capabilities. The current text indicates that but we should clarify that the NAICS subsets shall not be conflicting, i.e., exclude parts of each other.

=> Can discuss further offline whether this needs to be clarified.

- After offline discussion Nokia Networks explains that there was no consensus whether and what to change even though some companies think that there are issues with the current signalling. Nokia Networks would prefer to receive a clarification from RAN4 if there are really any problems. QC thinks that we could resolve it in RAN2 which interpretation to apply. QC clarifies only the aspects of the “subset” definition. In addition it needs to be discussed whether the NW is allowed to configure NAICS capabilities for more carriers.

=> Noted

R2-153722 Further discussion on NAICS capability subset definition; Qualcomm India; discussion;

- Nokia Networks does not agree with QC’s interpretation: [3 CC; 200 PRB] actually implies that the UE can support NAICS on up to 200 PRBs which may be split onto one, two or three CCs. This is also what the specification currently states. The only clarification required is the one agreed above, i.e., only entire CCs can be configured with NAICS.

=> Noted

R2-153833 Clarification for NAICS capability signalling; Nokia Networks; CR; 36.331; 12.6.0; 1906; F; Outcome CR of the e-mail discussion [90#24].;

=> CB: [LTE/NAICS] An updated CR may be provided in R2-153937 CR 1906 R1 (Nokia Networks)

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R2-153937 Clarification for NAICS capability signalling; Nokia Networks; CR; 36.331; 12.6.0; 1906 R1; F; Outcome CR of the e-mail discussion [90#24].;
=> Update Inter-operability issues
=> [LTE/NAICS] An updated CR may be provided in R2-153962

R2-153962 Clarification for NAICS capability signalling; Nokia Networks; CR; 36.331; 12.6.0; 1906 R2; F; Outcome CR of the e-mail discussion [90#24].;
=> The CR is agreed

6.2.6 WI: Low Cost MTC for LTE

(LC_MTC_LTE-Core, leading WG: RAN1, REL-12, started: Jun 13, **closed**: Dec 14, WID: RP-140522)

No contributions received.

6.2.7 WI: Group Call eMBMS congestion management for LTE

(GCSE_LTE-MBMS_CM-Core, leading WG: RAN3, started: Sep. 14, **closed**: Mar. 2015, WID: RP-141035)

No contributions received.

6.2.8 WI: FDD/TDD Carrier Aggregation

(LTE_CA_TDD_FDD-Core, leading WG: RAN1, REL-12, started: Jun 13, closed: Jun 14, WID: RP-140465)

Timing Difference

Incoming LSs

R2-153019 LS Out on TDD + FDD dual UL UE behavior (R4-153889; contact: Ericsson); RAN4; LS in;
=> Noted

R2-153050 Reply LS on TDD + FDD dual UL UE behavior; from RAN1; contact: QC; LS in
[Late]

=> Noted

Discussion & CRs

R2-153656 Refinement of requirements for TA difference in TDD-FDD CA; Ericsson; discussion; Rel-12; LTE_CA_TDD_FDD-Core;
[Moved from 6.1.1 to 6.2.8]

- Intel indicates that RAN1 thinks that the timing difference should not be increased for this case. RAN1 has sent such an LS to RAN4 but now it seems that RAN4 made the opposite decision. RAN1 is discussing whether to follow the RAN4 decision or to challenge it again.

=> CB: [LTE] See whether CR on “Refinement of requirements for TA difference in TDD-FDD CA” can be agreed depending on RAN1 and RAN4 discussion (Ericsson)
=> Postponed (According to LS in R2-153050, RAN4 should confirm their previous decisions)

R2-153657 Refinement of requirements for TA difference in TDD-FDD CA; Ericsson; CR; 36.300; 12.6.0; 0789; F; Rel-12; LTE_CA_TDD_FDD-Core;
Not treated
[Moved from 6.1.1 to 6.2.8]

R2-153658 Refinement of requirements for TA difference in TDD-FDD CA; Ericsson; CR; 36.300; 13.0.0; 0790; A; Rel-13; LTE_CA_TDD_FDD-Core;
Not treated
[Moved from 6.1.1 to 6.2.8]

Requirements on PCell support

R2-153144 Capturing PCell support for FDD-TDD CA; NTT DOCOMO, INC., Qualcomm Incorporated; CR; 36.306; 12.5.0; 0288; F;
=> CR is agreed

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6.2.9 LTE Other Closed Rel-12 WIs

Input to any other Rel-12 WI/SI not explicitly listed above.

(LCS_BDS-LTE-Core, leading WG: RAN2, REL-12, started: Mar 13, closed: Dec 13, WID: RP-130416)

(LTE_eDL_MIMO_enh-Core, leading WG: RAN1, REL-12, started: Sep 12, closed: June 14, WID: RP-121416)

(HetNet_eMOB_LTE-Core, leading WG: RAN2, REL-12, started: Dec.12, target: Sep 14, WID: RP-122007)

(Cov_Enh_LTE-Core, leading WG: RAN1, REL-12, started: Jun.13, closed: Jun.14, WID: RP-130833)

(LTE_TDD_eIMTA-Core, leading WG: RAN1, REL-12, started: Dec 12, closed: Jun.14, WID: RP-121772)

(SCM_LTE-Core, leading WG: RAN2, REL-12, started: Mar.14, closed: Sep.14, WID: RP-140434)

Including corrections to TEI12 enhancements introduced in Rel-12.

6.2.9.1 LTE Other Closed Rel-12 WIs – CP and common CP/UP

Optional / Mandatory

R2-153579 Capturing mandatory/optional features of Rel-12 UEs; NTT DOCOMO, INC., Ericsson, Huawei; CR; 36.306; 12.5.0; 0293; F; related to LSin R2-153022; Rel-12; LTE_SC_enh_L1-Core, LTE_UTRA_IncMon-Core;
=> CR is agreed

ACB Skip

R2-153249 highPriorityAccess for MMTEL voice, MMTEL video and SMS; MediaTek Inc.; CR; 36.331; 12.6.0; 1860; F; Rel-12; SCM_LTE-Core;
- Intel wonders whether the second part of the sentences (“related to mobile originating signalling”, “related to mobile originating calls”) is needed. MediaTek thinks that this condition is necessary since “highPriorityAccess” by itself does not distinguish MO and MT which use different parameters.

=> Add impact analysis
- Intel thinks that it is not obvious that AS will be aware whether a highPriorityAccess attempt is MO or MT

=> CB: [LTE] An updated CR on highPriorityAccess for MMTEL voice may be provided in R2-153938 CR1860 R1 (MediaTek)

R2-153938 highPriorityAccess for MMTEL voice, MMTEL video and SMS; MediaTek Inc.; CR; 36.331; 12.6.0; 1860 R1; F; Rel-12; SCM_LTE-Core;
- LG thinks that there is no problem with the current text. Intel agrees with LG. Chairman thinks that currently it is not clear what the UE shall do in case of “highPriorityAccess”. Chairman thinks that for “highPriorityAccess” the UE would never access the section 5.3.3.11. MediaTek agrees. Nokia Networks agrees that the current wording is not OK.

=> Postponed (Should discuss further how to address this case)

Capabilities

R2-153353 Correction on UE band combinition capability; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1866; F; Rel-12; TEI12;
=> CR is agreed

R2-153567 Clarification of the maximum number of bits of a single DL-SCH transport block for DL Category 16; NTT DOCOMO, INC., Huawei, Samsung, Intel Corporation; CR; 36.306; 12.5.0; 0292; F; Rel-12; LTE_CA-Core, TEI12, LTE_SC_enh_L1-Core;
=> CR is agreed

R2-153604 The support of UL64QAM; Huawei, HiSilicon, CMCC, Qualcomm Incorporated; CR; 36.331; 12.6.0; 1884; F; Rel-12; TEI12;
=> CR is agreed

6.2.9.2 LTE Other Closed Rel-12 WIs – UP

No contributions received.

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7 LTE Rel-13

7.1 WI: Licensed-Assisted Access using LTE

(LTE_LAA-Core, leading WG: RAN1, started: June 15, target: Dec. 15, WID: RP-151045)

Time budget: 1,5 TU

The approved version TR 36.889 is available here.

7.1.1 Organizational

Work Plan

R2-153792 RAN2 Work Plan of Licensed-Assisted Access to Unlicensed Spectrum; Huawei, Ericsson; discussion;
Proposal 1:
- QC wonders whether we should wait for RAN1 before starting that discussion. Huawei thinks that RAN1 is discussing the LBT scheme including support of multiple QoS levels. But if there is impact on RAN2 protocols, those would need to be captured by us. QC thinks that we should wait for RAN1.
- ETRI wonders whether there is any need to describe LBT in MAC considering that we did not expect MAC impact during the SI.

Proposal 3:
- Huawei confirms that we should re-use the existing RRM measurement framework as agreed in the SI.

Proposal 4:
=> Proposals 1 to 4 are agreed.
=> Noted

Running CRs

Stage-2

R2-153323 CR to capture LAA agreements; Huawei, HiSilicon; CR; 36.300; 13.0.0; 0787; B;
=> CB: [LTE/LAA] An updated running stage-2 CR may be provided in R2-153907 (Huawei)

✉ **[91#10][LTE/LAA] Two Weeks: Running stage-2 CR (Huawei)**
-Capture agreements from this meeting
=> Intended outcome: Technically endorsed running 36.300 CR in R2-153907 CR0787 R1

7.1.2 RRM Measurements

R2-153807 DRS measurements in LAA; QUALCOMM CDMA Technologies; discussion;
Proposal 1:
- Huawei thinks that we do not need to make such an assumption. QC thinks that in order to be able to measure neighbour frequency, this is a prerequisite since we agreed that a UE is configured with only one DRS DMTC window. Huawei thinks that the agreement from last meeting just means that only cells that are aligned with respect to the DMTC window can be measured by a UE.

Proposal 2:
- BlackBerry thinks that just the fact that the UE measured outside the DMTC window, does not means that all of that is necessarily from other operator's cells. Samsung points out that RAN1 had some discussion and concluded on the need for a separate DRS timing configuration. QC thinks that RAN1 is discussing this. We could take it into account in the next meeting.

=> Postponed

Proposal 3:
- Ericsson wonders what the eNB should do with that information. QC thinks that in particular for neighbour cells this ensures that the eNB does not use an outdated result.

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=> Can discuss further whether outdated measurements or inaccurate measurements due to absent DRSs are problematic and need to be resolved.

Proposal 4:

- ZTE wonders whether RSSI always includes all sources. Nokia Networks thinks that we first need from RAN1 the definition of RSSI before deciding this.
- Ericsson wonders what RSSI probability is. Would it be like a histogram? QC thinks that it would basically be the probability that RSSI was above a threshold. Ericsson understands that this would basically be a histogram with two buckets. Ericsson thinks that for estimating the downlink interference level it is useful to have more than just two buckets. For UL it would be sufficient to know the probability that RSSI is above the LBT threshold. Nokia Networks wonders how the NW would use the histogram. QC also does not see a need for many bins. Huawei is fine with the agreement and thinks that the number of bins and the granularity of the probability can be discussed later.

Agreements

1 A UE is only expected to detect and measure cells transmitting DRS during the configured DRS DMTC window.

4 Introduce measurements of average RSSI and channel occupancy (percentage of time that RSSI was above a threshold) for reporting in LAA

- FFS whether multiple thresholds should be distinguished

=> Noted

R2-153659 RSSI measurement reporting for LAA; Ericsson; discussion;

=> Noted

R2-153666 Scope, characteristics and high level design of RSSI measurement; Samsung; discussion;

- Samsung thinks that the UE and E-UTRAN need to perform the RSSI measurement during exactly the same times/ MTUs. Furthermore, the UE might have to report the result for all time frames/MTUs. Huawei thinks that RAN1 has already agreed that the NW will indicate to the UE at which occasions in time to perform RSSI measurements. Huawei thinks that RSSI is mostly for carrier selection and that it is not necessary to report all measurement occasions.
- Samsung thinks that the RSSI measurements are not time critical and therefore it is sufficient to re-use the existing measurement gaps.

=> Noted

R2-153311 Considerations of Measurement Issues in LAA; Huawei, HiSilicon; discussion;

- Nokia Networks indicates that this is FFS in RAN1. Intel thinks that it should be discussed in the context of the RAN4 SI and is not specific to LAA but generally applicable to CA.

Proposal 4:

- QC think we need to investigate filtering a bit more

Proposal 5a:

- Nokia Networks thinks that 5a would contradict to 4 since if we re-use the current filtering there will always be a valid value.

Agreements

1 The NW configures one DMTC for all neighbor cells as well as for the serving cell (if any) in one frequency (as for Rel-12 DRS mechanism)

5 Periodical reporting is supported for LAA RRM measurements,

6 Reporting events A1/A2/A4/A6/C1/C2 are supported on LAA SCells

=> Noted

R2-153125 TTT handling for LAA RSRP/RSRQ measurement; Sony; discussion;

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R2-153126 LAA Measurements and carrier selection procedure; Sony; discussion;
R2-153167 Measurement objects for LAA; SAMSUNG Electronics Co., Ltd.; discussion;
R2-153196 Discussion on RSSI Reporting; Guangdong OPPO Mobile Telecom.; discussion;
R2-153209 Discussion on LAA DRS design; China Mobile Com. Corporation; discussion;
R2-153216 RRM measurements and reporting; China Mobile Com. Corporation; discussion;
R2-153217 RSSI measurements and reporting; China Mobile Com. Corporation; discussion;
R2-153273 RSSI measurement for LAA; Intel Corporation; discussion;
R2-153312 RSSI Measurement in LAA; Huawei, HiSilicon; discussion;
R2-153396 RRM measurement for carrier selection; Kyocera; discussion;
R2-153419 Discussion on LAA Measurement and Report; ITRI; discussion;
R2-153429 RSSI Measurement for LAA; ETRI; discussion;
R2-153453 Valid samples in DRS based measurement; NEC Corporation; discussion;
R2-153454 Draft LS on valid measurement samples in LAA; NEC Corporation; LS out;
R2-153494 RRM measurement for LAA cell; CATT; discussion;
R2-153517 Further Discussion on LAA Radio Link Adaptation; ZTE Corporation; discussion;
R2-153521 Further Discussion on RRM Measurement and Carrier Selection for LAA Scell; ZTE Corporation; discussion;
R2-153525 Higher Layer Impacts by LAA LBT Procedure; ZTE Corporation; discussion;
R2-153660 Introducing RSSI measurements for LAA; Ericsson; CR; 36.331; 12.6.0; 1895; B;
R2-153671 Measurement configurations for LAA; Sharp; discussion;
R2-153815 RSSI measurement for unlicensed frequency; LG Electronics Inc.; discussion;
Above 21 Tdocs not treated

R2-153393 RSSI Measurement for LAA; ETRI; other;
[Withdrawn]

7.1.3 Other

R2-153163 Consideration on DL MAC for unlicensed band; LG Electronics Inc.; discussion;
Proposal 1:
- Ericsson thinks that we discussed this a lot in the SI and did not conclude that we need to change the DRX scheme. LG thinks that this proposal is different.
- DCM thinks that we had the same discussion for CA enhancements and don't need to repeat it.
- Samsung thinks that this solution would not give a significant enhancement. If common DRX is not sufficient, we should introduce a clean solution with separate DRX.
- ZTE supports LG's proposal. TCL supports the LG proposal but would like to see the benefits from scheduling point of view. Nokia Networks wonders points out that we finished the SI and should only be re-opened if many companies support the same solution. Samsung agrees with Nokia Networks. DCM agrees with Samsung. Motorola thinks that the LAA operation would result in extended active time and hence we should revisit this. QC agrees with Motorola.

Proposal 2:
- DCM supports proposal 2.
- Ericsson thinks that if we touch this, we should rather have deactivation timer values separately per SCell. Huawei thinks that we could just re-use what we agreed for PUCCH SCell, i.e., not to use this timer for LAA SCells. Ericsson thinks that this is one possible configuration if configurable per SCell. DCM agrees with Ericsson.

=> Noted

R2-153745 Understanding DRX operation with LAA; Motorola Mobility UK Ltd.; discussion;
- Ericsson understands that the problem is that no transmissions on the PCell have been assumed and hence the UE goes to DRX. Motorola aimed to use only the LAA SCell. Ericsson thinks that an eNB would also serve a UE on the PCell if there is data and if the PDB is about to expire. That would keep the UE active and give the possibility to serve it on PCell and LAA SCells. Huawei agrees with Ericsson. QC thinks that instead of waking up frequently and long on all cells, the UE could sleep on the PCell and be awake often on the SCell and be scheduled only there. Nokia Networks thinks that this has never been a concern in CA where the eNB might also serve a UE primarily on the SCell. QC thinks that due to LBT it is necessary to configure a longer active time. If that longer time is also applied to the PCell the UE consumes a lot of power for both PCell and SCells. Nokia Networks thinks that if the LBT kicks in so often, it might be better to deactivate the LAA

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SCell and use only the PCell instead. QC thinks that the LAA SCell might still offer some throughput. Motorola thinks that even for low LAA load, the active times on that SCell have to be long in order to ensure on-time packet delivery.
- Motorola thinks that the SI requires support for VoLTE on the LAA SCell. Huawei thinks that there is no such requirement. The eNB may schedule services on any available serving cell.
- CATT points out that we have anyway only DL LAA so that the corresponding UL traffic will anyway keep the PCell awake. Motorola agrees with that point and therefore does not suggest separate DRX cycles but rather to extend the common active time when the UE observes that the carrier is busy (LBT).
- BlackBerry thinks that we should avoid that the UE stays awake on the LAA SCell very long while sleeping on the PCell. BlackBerry would rather prefer that the UE is active and served quickly on all serving cells and then goes to sleep again.

=> Noted

R2-153746 Options for Reducing Active Time with LAA; Motorola Mobility UK Ltd.; discussion;
R2-153840 Considerations on DRX procedure for LAA-LTE; QUALCOMM CDMA Technologies; discussion;
R2-153314 DL LBT Operation; Huawei, HiSilicon; discussion;
R2-153313 Supported functionalities and parameters for LAA cell; Huawei, HiSilicon; discussion;
R2-153421 UE assistance for carrier selection; ITRI; discussion;
R2-153431 Discussion on Activation/Deactivation for LAA; ETRI; discussion;
R2-153516 Further Discussion on LAA Data Transmission; ZTE Corporation; discussion;
R2-153523 Further Thoughts on (De)activation of LAA Scell; ZTE Corporation; discussion;
R2-153526 LCP Modification for LAA Scell; ZTE Corporation; discussion;
R2-153527 UL Issues for LAA Scell; ZTE Corporation; discussion;
R2-153569 Deactivation for LAA; NTT DOCOMO INC.; discussion;
R2-153779 LAA SCell Activation and Deactivation; Samsung Electronics Co., Ltd; discussion;
R2-153780 Update to DRX Behaviour in support of Asynchronous UL HARQ; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153799 Discussion on LAA SCell Activation and Deactivation; KT Corporation; discussion;
Above 14 Tdocs not treated

R2-153395 Discussion on Activation/Deactivation for LAA; ETRI; other;
[Withdrawn]

7.2 WI: CA enhancements

(LTE_CA_enh_b5C-Core, leading WG: RAN1, started: Dec. 14, target: Dec. 15, WID: RP-150771)

Time budget: 1 TU (+ 1TU for stage-3 UP aspects)

7.2.1 Organizational

Incoming LSs

R2-153012 LS on RAN1 agreements on CA Enhancement Beyond 5 Carriers (R1-153672; contact: Nokia Networks); RAN1; LS in;
=> Noted

Work Plan

R2-153570 Revised Work Plan for LTE Carrier Aggregation Enhancement Beyond 5 Carriers; NTT DOCOMO INC., Nokia Networks; discussion;
=> Noted without presentation

Running CRs

Technically endorsed 36.300 CR after RAN2-90: R2-152855

=> CB: [LTE/CA] An updated draft running 36.300 CR for B5C and SCell on PUCCH may be provided in R2-153945 (Nokia Networks)

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R2-153945 Running 36.300 CR to capture agreements on carrier aggregation enhancements; Nokia Networks; draftCR; Rel-13; B;
=> Change to “Use non-critical extension for SCellToAddMod and SCellToRelease”
=> Clarify that PDCP SN extension applies only to RLC AM DRBs.
=> With these changes the running 36.300 CR is endorsed in R2-153963

MAC

R2-153653 Running MAC CR for Carrier Aggregation enhancements; Ericsson; CR; 36.321; 12.6.0; 0793; B;
- Ericsson clarifies that this is intended to be used as baseline for the running CR capturing all agreements (including those from this meeting)

=> CB: [LTE/CA] An updated MAC CR on B5C and SCell on PUCCH capturing the agreements from this meeting may be provided in R2-153947 (Ericsson)

R2-153947 Running MAC CR for Carrier Aggregation enhancements; Ericsson; CR; 36.321; 12.6.0; 0793 R1; Rel-13; B;

✉ **[91#11][LTE/CAe] Two weeks: Running 36.321 CR (Ericsson)**
-Align with RRC CR
=> Intended outcome: Technically endorsed running 36.321 CR in R2-153964
CR0793 R2

RRC

R2-153459 36331 CR for capturing B5C and SCell on PUCCH; Nokia Networks; CR; 36.331; 12.6.0; 1872; Rel-13; B;

=> CB: [LTE/CA] An updated RRC CR on B5C and SCell on PUCCH capturing the agreements from this meeting may be provided in R2-153946 (Nokia Networks)

R2-153946 36331 CR for capturing B5C and SCell on PUCCH; Nokia Networks; CR; 36.331; 12.6.0; 1872 R1; Rel-13; B;

✉ **[91#12][LTE/CAe] Two weeks: Running 36.331 CR (Nokia Networks)**
-Align with MAC CR
=> Intended outcome: Technically endorsed running 36.331 CR in R2-153946

7.2.2 CP and common aspects

7.2.2.1 B5C

E.g. Capability signalling; RRC configuration; …

R2-153457 Impacts on RRC for more than 5 CCs ; Nokia Networks ; discussion;
- Ericsson prefers to have a completely new value range covering all cells. Nokia Networks agrees. ZTE also supports this

=> Use non-critical extension for SCellToAddMod and SCellToRelease
=> Introduce r13 version of CrossCarrierSchedulingConfig in order to capture extension of schedulingCellID as well as explicit cif-configuration
- Samsung wonders whether the eNB could also use the r13 version when configuring less than 6 serving cells. Huawei agrees that we should discuss this aspect. We need to specify the UE behaviour when NW has configured the r10 version and then provides the r13 version instead.

=> FFS: UE behaviour when changing from r10 to r13 version for reconfiguration and handover.
=> Noted

R2-153102 Solution to reduce CA capability signalling size for B5C; NTT DOCOMO, INC.; discussion;
- Huawei thinks that a UE also has to include the legacy capabilities. Huawei thinks we could consider some restrictions for the legacy band combination list or the new eNB could create the legacy capability format based on the new Rel-13 format.
- Huawei thinks we should certainly study the concept further to understand how we can save most overhead.

Agreements

1 The UE shall provide Band Combination capability signalling for more than 5 carriers only upon request of the eNB.

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=> Noted

R2-153135 UE capability structure for carrier aggregation enhancements; Nokia Networks; discussion;

- Nokia Networks thinks that with Reference to tables we could not only get rid of the band numbers but maybe even of the bandwidth classes since those would also be implicitly given by the tables. QC thinks that we should discuss this with RAN4. Nokia Networks agrees that we cannot decide this by ourselves.

=> Discuss (email discussion) reference to RAN4 tables in RAN2 before involving RAN4.
=> Noted

R2-153274 Discussion on UE capability signaling for B5C; Intel Corporation; discussion;
Not treated

✉ **[91#21][LTE/CAe] Capability signalling enhancements (Nokia Networks)**
-Identify feasible solutions to reduce capability signalling
-Ensure backwards compatibility
=> Intended outcome: Email discussion report to the next meeting
=> Intended outcome: LS to RAN4 if needed

R2-153839 C-DRX for B5C; QUALCOMM CDMA Technologies; discussion;

- Ericsson thinks that we discussed it a lot for LAA and concluded to stick to common DRX. LG thinks that this is different from LAA since here more power saving is intended on the other carriers whereas in LAA the intention was to allow longer on durations on the LAA carriers. LG support the QC proposal. Huawei agrees with Ericsson.
- Chairman wonders why we don't just use A/D. QC thinks that this scheme could be faster. Chairman thinks that we should then reduce the A/D timeline. QC thinks that this would be up to RAN4 to decide
- Huawei thinks that it might even be more efficient to enable all carriers at once when data becomes available.
- Nokia Networks thinks that this is not important and we should rather focus on other aspects
- ZTE points out that the independent DRX could also result in interruptions on the other active carriers.

=> Noted. (can come back if more support)

R2-153574 Discussion on C-RNTI handling for CA beyond 5CCs; NTT DOCOMO INC.; discussion;
R2-153360 UE CA capability signalling for B5C; Huawei, HiSilicon; discussion;
R2-153361 Remaining CP issues for B5C; Huawei, HiSilicon; discussion;
R2-153423 C-RNTI collision problem in Rel-13 CA enhancements ; Samsung Telecommunications; discussion;
R2-153740 Considerations on capability signalling enhancements for B5C; Ericsson; discussion;
Above 5 Tdocs not treated

7.2.2.2 PUCCH on SCell

E.g. RRC configuration, …

R2-153458 Impacts on RRC for PUCCH on SCell; Nokia Networks; discussion;

- CATT points out that this paper does not list all things that need to be configured. Nokia Network agrees that this is more complete in R2-153504. Nokia Networks understands that CATT suggest to reuse the DC structure of the PSCell.

=> Add PUCCH SCell configuration to RadioResourceConfigCommonSCell and RadioResourceConfigDedicatedSCell
=> Consider the details as proposed in R2-153504 (Table 1)
=> Indicate in the RadioResourceConfigDedicatedSCell configuration which PUCCH SCell to use. Absence of the field indicates that the PUCCH of the PCell/PSCell is supposed to be used.
=> Noted

R2-153504 Detail on PUCCH SCell configuration; CATT; discussion;
Not treated

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R2-153505 UE actions upon PUCCH SRS release request; CATT; discussion;
- Ericsson thinks that the current modelling is not correct since MAC does the release for each SCell and RRC iterates again through all SCells. We should try to clean this up.
- Huawei thinks that for the SR failure there is still an open issue in the UP session. Nokia Networks agrees that we could postpone that part.

=> RAN2 agrees to the principle. The details can be discussed further.
=> Noted

R2-153636 Change of PUCCH SCell; Samsung; discussion;
R2-153587 PUCCH SCell activation and UL timing alignment; Alcatel-Lucent Shanghai Bell, Alcatel-Lucent; discussion;
Above 2 Tdocs not treated

7.2.3 UP aspects

Stage-3 UP aspects

Documents submitted to this AI treated in the UP session. (See Annex G)

7.2.3.1 B5C

E.g. Header formats, …

R2-153152 PHR format for eCA; LG Electronics Inc.; discussion;
R2-153171 L2 enhancements for eCA; SAMSUNG Electronics Co., Ltd.; discussion;
R2-153263 PHR for CA enhancement for more than 5 CCs; Nokia Networks; discussion;
R2-153275 Layer 2 header size to support CA with up to 32 CCs; Intel Corporation; discussion;
R2-153296 L2 enhancements for more than 5 CCs; Nokia Networks; discussion;
R2-153297 Further Extended Power Headroom Report; Nokia Networks; CR; 36.321; 12.6.0; 0786; B;
R2-153298 Further Extended Power Headroom Report; Nokia Networks; CR; 36.331; 12.6.0; 1862; B;
R2-153299 Extending RLC header; Nokia Networks; CR; 36.322; 12.2.0; 0109; B; Relates to R2-153296;
R2-153324 Remaining issues on Activation/Deactivation MAC CE for b5C; Innovative Technology Lab Co.; discussion;
R2-153362 UP impacts due to high peak data rate of 32CCs; Huawei, HiSilicon; discussion;
R2-153363 Extention of L field in MAC PDU; Huawei, HiSilicon; CR; 36.321; 12.6.0; 0788; B;
R2-153364 Extention of SN and SO field in RLC PDU; Huawei, HiSilicon; CR; 36.322; 12.2.0; 0110; B;
R2-153365 Extention of SN field in PDCP PDU; Huawei, HiSilicon; CR; 36.323; 12.4.0; 0141; B;
R2-153366 Extention due to high data rate; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1870; B;
R2-153418 Details of Activation/Deactivation MAC CE in UE aspect; Samsung Telecommunications; discussion;
R2-153420 Remaining issues on PHR MAC CE in UP aspect; Samsung Telecommunications; discussion;
R2-153425 BSR format for B5C; LG Electronics Inc.; discussion;
R2-153577 Combination solution for AD MAC CE with up to 32 CCs; Beijing Xinwei Telecom Techn.; discussion;
R2-153588 BSR report for enhanced CA ; Alcatel-Lucent Shanghai Bell, Alcatel-Lucent; discussion;
R2-153593 Remaining format for eCA PHR ; Alcatel-Lucent Shanghai Bell, Alcatel-Lucent; discussion;
R2-153601 Extending MAC protocol header; Ericsson; CR; 36.321; 12.6.0; 0791; B;
R2-153602 Extending RLC protocol header; Ericsson; CR; 36.322; 12.2.0; 0112; B;
R2-153603 Extending PDCP protocol header; Ericsson; CR; 36.323; 12.4.0; 0142; B;
R2-153605 Impact of carrier aggregation enhancement on L2 UP protocols; Ericsson; discussion;
R2-153651 Extension of BSR for CA enhancements beyond 5 CC; Ericsson; discussion;
R2-153652 New BSR mapping table for Carrier Aggregation enhancements beyond 5 CCs; Ericsson; CR; 36.321; 12.6.0; 0792; B;
R2-153654 LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs; Ericsson; discussion;
R2-153655 CR for LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs; Ericsson; CR; 36.321; 12.6.0; 0794; B;

7.2.3.2 PUCCH on SCell

R2-153154 Remaining issue on TAG for CA enhancement; LG Electronics Inc.; discussion;
R2-153159 sCellDeactivationTimer for PUCCH SCell; LG Electronics Inc.; discussion;
R2-153226 PUCCH SCell pre-activation; Nokia Networks; discussion;
R2-153228 Remaining issues on PUCCH SCell; Nokia Networks; discussion;

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R2-153367 SRS handling for SCells in Secondary PUCCH Group; Huawei, HiSilicon; discussion;
R2-153368 Issues for SR on PUCCH Scell; Huawei, HiSilicon; discussion;
R2-153369 Pre-activation SR; Huawei, HiSilicon; discussion;
R2-153415 Reducing use delay on PUCCH SCell; III; discussion;
R2-153417 Remaining issues on interleaved SR; Samsung Telecommunications; discussion;
R2-153463 Managing PUCCH resources on a deactivated PUCCH SCell; HTC Corporation; discussion;
R2-153467 Discussion on SR prohibition time and D-SR failure; HTC Corporation; discussion;
R2-153506 Discussion on PHR for eCA; CATT; discussion;
R2-153509 PUCCH SCell activation; CATT; discussion;
R2-153571 Activation_deactivation of PUCCH SCell; NTT DOCOMO INC.; discussion; Resubmission of R2-152424;
R2-153573 Draft LS on PUCCH SCell activation; NTT DOCOMO INC.; LS out; Related to R2-153571;

7.3 WI: Single-Cell point-to-multipoint transmission

(LTE_SC_PTM-Core, leading WG: RAN2, started: June 15, target: Dec 15, WID: RP-151110)

Time budget: 1 TU

The approved TR 36.890 is available here.

7.3.1 Organizational

R2-153377 Work plan for SC-PTM WI; Huawei (Rapporteur); discussion;
- Huawei thinks that there will be RAN1 impact and we should inform RAN1 considering that they have no dedicated task for this.

=> Noted

7.3.2 SC-PTM Configuration and Operation

R2-153378 SC-PTM configuration and operation; Huawei, HiSilicon; discussion;
Proposal 1:
- ALU thinks that the functionality of the SC-MCCH is quite different from the existing MCCH and we should discuss the mapping of logical channel to transport channel. Nokia Networks assumes that there should be a separate logical control channel for SC-PTM. QC thinks that we should consider separate logical control channels.
- Samsung thinks that there is actually no need for an MCCH considering that there is anyway no MBSFN gain. Ericsson thinks that we have not discussed whether there is also the possibility for a synchronized scheme where one might actually have an MBSFN gain. ALU agrees that we don't need to model this as MCCH if there is no MSBFN gain. Huawei only considers single cell scheme for Rel-13. LG thinks that we agreed to use an MCCH anyway. Huawei thinks that the SIB is limited in size and therefore MCCH is a better choice.
- Ericsson wonders whether the mapping of one Group-RNTI per TMGI could be provided by the MCE. Huawei thinks that for SC-PTM the idea was that the eNB configures this. But Huawei is fine to discuss this in the context of Service Continuity. QC agrees with Ericsson that the mapping should be done by the MCE.

Proposal 4:
- LG would prefer to use the same mechanism as for MBSFN MBMS and e.g. use one of the 8 bits defined there. QC agrees with LG that we should maintain the similarity. The 8 bits could be used to address different service groups. ZTE thinks that for 1.4 MHz carrier we cannot send the change notification.
- Nokia Networks wonders which DCI format Huawei intends to use and whether it would have RAN1 impact. Huawei intends to use an existing format.
- ALU thinks that the UE would have to follow the NDI even if it is not scheduled to come according to user guide. Chairman thinks that the UE would consider the NDI to be toggled once the time has come according to the EGP. And from then onwards it would check whether the NDI toggles. Ericsson thinks that there would be some special cases where the UE would have to follow possible NDI changes. Huawei thinks that option 2 would not have that problem. Option 2 would however work also in 1.4 MHz carriers.
- LG would not want to mix the HARQ operation (NDI) with the change on MCCH level.

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- Ericsson would also prefer to maintain similarities with MBMS and would therefore prefer the option 1 outlined in the Huawei document. QC agrees.

=> FFS how to realize the change notification.

Proposal 5:

- LG would like to use SIB13. Huawei thinks that some fields in SIB13 are mandatory but not needed for SC-PTM. QC agrees that at least MBSFN area would need to be provided but of course not applicable to SC-PTM. Samsung wonders which additional impacts we get e.g. related to references in 36.304. Huawei thinks that there is just one reference in 36.304 to SIB13 and that would need to be updated accordingly. Huawei does not see other impacts. Nokia Networks would prefer a new SIB.

Proposal 7:

- ZTE thinks that the TM only needs to be configured per cell and not per service. QC thinks we could ask RAN1 about this. Huawei thinks we don't need to ask RAN1. Configuring the TM per service allows more flexibility and even allows supporting additional TMs in the future. LG would like to ask RAN1 about this.
- ALU wonders whether it will be possible to schedule more than one Group-RNTI in a subframe. If we allow this and the eNB schedules multiple services with different TMs it is not clear that UEs could receive that. Huawei is not sure but thinks that if it is not possible, the NW could ensure that only services with the same TM are scheduled in the same subframe. Ericsson thinks that this would be important to find out.

=> We will ask RAN1 whether a UE is required to support reception of multiple services (G-RNTIs) with different TMs in one subframe.

Proposal 8:

- LG thinks that this would result in non-aligned periods for different services that a UE would need to follow. In MBMS, there was alignment ensured implicitly. Huawei thinks that this might e.g. allow spreading different services in time for cases where a UE cannot receive many services in the same TTI. Huawei thinks that already in MBSFN the UE might have to receive different PMCHs and hence support multiple periods. ALU thinks that the proposed scheme could still put too much restrictions on the scheduler. ALU would like to consider an MSI like mechanism which would increase the flexibility without increasing unnecessarily the power consumption. Huawei thinks that we used MSI since we did not have PDCCH. Now we have PDCCH and therefore don't need MSI.
- QC would like even more flexibility by re-using the connected mode DRX concept. Huawei thinks we should avoid such schemes since they are error prone. In case the UE misses an initial transmission in a scheduling period it may go to DRX and miss also subsequent transmissions. QC thinks it will be recovered in the next cycle.
- Samsung thinks we also need to take into account the synchronization across cells as discussed in the context of service continuity. LG agrees with that observation and points out that also synchronization with PMCH services should be ensured. Nokia Network thinks that we did not assume any synchronization across cells. LG thinks that the SYNC protocol will be re-used which allows ensuring alignment across cells.
- Huawei thinks that the proposed scheme would allow to configure either separate, non-overlapping scheduling occasions for different service and thereby maximize the sleep opportunities for UEs interested in only one service. Or the eNB may configure the same scheduling periods to multiple service and thereby get more scheduling flexibility at the expense of higher UE power consumption.
- QC thinks that this scheme would anyway not be flexibly for larger traffic bursts since the scheduling occasions would need to be re-configured. Chairman thinks that the scheme that Huawei suggests maintains more similarity with MBSFN. Huawei thinks that the unicast DRX scheme would result in more packet loss. Ericsson wonders whether there is any difference between IDLE and CONNECTED. Huawei thinks that the UE behaviour is supposed to be the same.
- ALU thinks that PDCCH reception is today coupled with DRX and since we use PDCCH for SC-PTM we have to carefully evaluate the resulting impact of the scheme that Huawei describes. LG agrees with Huawei that the broadcast reception on PDCCH is today not considered in the unicast DRX description.
- ALU wonders about HARQ retransmissions. Huawei thinks that there is no UL feedback and blind retransmissions don't seem too beneficial. But the eNB could anyway schedule those in the pre-configured scheduling occasions.
- ALU thinks that the flexibility of having different patterns per service may not be usable anyway since it is not predictable long in advance how many resources will be needed for

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each service at which point in time. Therefore, practically, many or even all services may have to share the same pattern.

- QC would like to discuss this further until next meeting. LG agrees. ALU would also like to keep this open until next meeting. Huawei wants to keep their proposal 8 as working assumption. Chairman thinks that the proposal maintains a lot of commonality with MBSFN and also allows for a synchronized transmission as suggested by some companies.

Agreements

1 Confirm the following agreements for SC-PTM configuration and operation:
• Use one Group-RNTI per TMGI.
• Use SC-PTM specific MCCH to provide the SC-PTM configuration, e.g. TMGI to Group-RNTI mapping. The MCCH for SC-PTM is a new logical channel.
• Use SC-RNTI to identify the PDCCH that contains the scheduling information for SC-MCCH.
• System information contains the SC-MCCH configuration.

2 Only one SC-MCCH can be configured for one cell.

3 SC-MCCH supports repetition period, modification period and change notification.

5 Introduce a new SIB to accommodate the SC-MCCH configuration, which contains the SC-MCCH modification period, SC-MCCH repetition period and SC-MCCH subframe offset.

6 The value of SC-RNTI is predefined in the specification.

7 SC-PTM configuration comprises the list of MBMS services to be provided over SC-PTM, for each including:
• TMGI and optional Session ID
• Associated Group-RNTI
• Transmission Mode (i.e. TM 1, 2 or 3)

8a The SC-PTM reception opportunities are independent of the unicast DRX scheme.

=> Noted

✉ **[91#22][LTE/SC-PTM] Scheduling pattern, DRX and Change Notification (Huawei)**
-Discuss whether SC-PTM configuration also comprises the scheduling period, scheduling window and start offset which indicates the subframes where UE should monitor the associated Group-RNTIs on PDCCH.
-Discuss whether the pattern is per service
-Discuss whether more flexible schemes should be considered (e.g. period extends when valid PDCCH assignment detected…)
-Discuss how change notification is provided
=> Intended outcome: Email discussion report to next meeting

R2-153246 Reception of DL-SCH carrying MTCH; LG Electronics Inc.; discussion;
R2-153408 Link adaptation for SC-PTM transmission; Kyocera; discussion;
R2-153187 Discussion on UL feedback for SC-PTM; Fiberhome Technologies Group; discussion;
R2-153245 Reception of DL-SCH carrying MCCH; LG Electronics Inc.; discussion;
R2-153390 SC-PTM configuration procedure; TD Tech; discussion;
Above 5 Tdocs not treated

R2-153409 Details of radio interface enhancements for SC-PTM transmission; Kyocera; discussion;
[Withdrawn]

R2-153777 Details of radio interface enhancements for SC-PTM transmission; Kyocera; discussion;
R2-153472 Issues of SC-PTM configuration; Potevio Company Limited; discussion;
R2-153635 SC-PTM Configuration; NEC; discussion;

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R2-153637 ROHC and ciphering for SC-PTM; NEC; discussion;
R2-153781 SC-PTM Configuration; Qualcomm Incorporated; discussion;
Above 5 Tdocs not treated

7.3.3 Service Continuity

R2-153496 Service continuity aspects for SC-PTM; Ericsson; discussion;
Proposal 1:
- Huawei thinks that the unified G-RNTIs does not give a benefit in scenarios where a service is provided only in individual cells. Ericsson agrees but wonders whether this is the focus scenarios. Huawei thinks we should support SC-PTM to SC-PTM and SC-PTM to unicast. QC thinks that for the single cell scenario, the SI could indicate the services provided by the neighbour cell(s). Ericsson thought that this causes a lot of overhead and frequent updates in SIB. This is in particular since/if SC-PTM is supposed to be very dynamic. Huawei thinks that the information about service support in neighbour cells could be provided in SC-MCCH. Nokia Networks wonders how dynamic it will be. Chairman thinks that if we want to broadcast the neighbour cell information, the MCCH could indicate for each service a list of PCIs of the neighbour cells that provide the same service. If the MCE decides which cell provides which service, this could be handled by the MCE. ALU points out that if we do it this way, the PDCCH change notification shall not be triggered if only neighbour cell information changes. A UE receiving the service needs to read MCCH anyway and will get the update. UEs not receiving any service, don't need to re-read any MCCH. Huawei thinks that this would be a good scheme. QC thinks that we could do the same in SIB15. LG thinks the MCCH scheme would be good if MCE decides which cell provides which service. But otherwise, it could be difficult. Huawei thinks that with the proposed MCCH scheme, SIB15 would only ensure that UEs prioritize the right carrier. MCCH provides information about intra-frequency neighbour cells.
- ALU thinks we need to know which node selects MBSFN vs. SC-PTM. Huawei thinks that the MCE decides as we discussed in the SI.
- Ericsson thinks that for a connected mode solution the eNB would need to indicate the services of interest in the interest indication. But that would increase the complexity.

=> Noted

✉ **[91#23][LTE/SC-PTM] Service continuity (Huawei)**
-Discuss suitable means to realize service continuity
-Consider overhead in broadcast and e.g. update frequency
=> Intended outcome: Email discussion report to the next meeting

R2-153410 Service continuity with SC-PTM; Kyocera; discussion;
R2-153379 Service Continuity for the UE in RRC_CONNECTED; Huawei, HiSilicon; discussion;
R2-153388 Service continuity solution for SC-PTM; TD Tech; discussion;
R2-153411 Switching between SC-PTM and MBSFN; Kyocera; discussion;
R2-153473 Accurate RAN counting mechanism; Potevio; discussion;
R2-153712 Efficient Solution for SC-PTM Service Continuity; Nokia Networks; discussion;
R2-153782 SC-PTM Service Continuity; Qualcomm Incorporated; discussion;
R2-153818 SC-PTM service continuity in RRC CONNECTED; LG Electronics Inc.; discussion;
Above 8 Tdocs not treated

7.3.4 Other

R2-153380 PDCCH search space for SC-PTM transmission; Huawei, HiSilicon; discussion;
Not treated
R2-153381 Draft LS to RAN1 on SC-PTM transmission; Huawei; LS out;
- Add the question regarding transmission modes (see above)

=> CB: [LTE/SC-PTM] An update draft LS may be provided in R2-153949 (Huawei)
R2-153949 Draft LS to RAN1 on SC-PTM transmission; Huawei; LS out;
✓ => The LS on SC-PTM transmission to RAN1 is approved in R2-153965

R2-153382 Introduction of SC-PTM stage2; Huawei, HiSilicon; draftCR; 36.300; 13.0.0;

✉ **[91#13][LTE/SC-PTM] Two week: Running stage-2 CR (Huawei)**
-Capture the agreements from this meeting
=> Intended outcome: Endorsed running stage-2 CR

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7.4 WI: Further LTE Physical Layer Enhancements for MTC

(LTE_MTCe2_L1-Core, leading WG: RAN1, started: Sep. 14, target: Dec. 15, WID: RP-150492)

Time budget: 2 TU

7.4.1 Organizational

Incoming LSs

R2-153015 Response LS to R2-151786 on Paging for MTC (R3-151311; contact: Alcatel Lucent); RAN3; LS in;
=> See draft reply LS in R2-153939
=> Noted

R2-153021 LS response to R1-150919 = R2-151007 on measurement performance for MTC (R4-153909; contact: Ericsson); RAN4; LS in;
=> Noted

R2-153051 LS response on measurement performance for Rel-13-MTC; from RAN4; Contact: Ericsson; LS in
=> Noted

R2-153007 Reply to LS to S3-151418 = R2-152017 on C-IoT/MTC data transmission targets for security-related procedures (GP-150669; contact: Vodafone); GERAN; LS in;
=> Noted

R2-153052 Reply LS on PRACH coverage enhancement; from RAN4, to RAN1, CC: RAN2; Contact: Huawei
=> Noted

R2-153053 Reply LS to R1-145455 on the maximum power of the new UE power class for MTC (R4-155349; contact: Ericsson) from RAN4
=> Noted

R2-153054 LS reply to R2-152914 on measurements cell selection and reselection for MTC LC/EC (R4-155119; contact: Nokia Networks) RAN4
=> Noted

Outgoing LSs

=> CB: [MTC] A reply LS indicating that the approach outlined by RAN3 is feasible may be provided in R2-153939. (ALU)

R2-153939 Draft Response LS to R2-153015 on Paging for MTC to RAN3; Contact: ALU
✓ => The Response LS on Paging for MTC to RAN3 is approved in R2-153966

Running CRs

The technically endorsed running 36.300 CR from RAN2-90 is available in R2-152933 (result of [90#10]).

✉ **[91#14][LTE/MTC] Two weeks: Running stage-2 CR (Ericsson)**
=> Intended outcome: Technically endorsed running 36.300 CR in R2-153967; an LS to RAN1 with the attached running CR in R2-153968

RRC

R2-153627 Running RRC CR for Rel-13 low complexity and coverage enhanced UEs; Ericsson; draftCR; 36.331; 12.5.0;
Not treated

R2-153618 Running RRC CR for Rel-13 low complexity and coverage enhanced UEs; Erisson; CR; 36.331; 12.6.0; 1888; B;
[Withdrawn]

7.4.2 SIB

Including output of [90#23][LTE/MTC-LC] SIB Contents (Intel)

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R2-153277 Email discussion summary report on [90#23][LTE/MTCe2] SIB Contents; Intel Corporation; discussion;
Proposal 1:
=> Aspects listed under proposal 1 are agreed
=> Exception 1.6: Can decide later based on ASN.1 whether to exclude values 1, 2 and 5ms.
- 1.9: Huawei thinks that this will allow for very low change rate of SIB. Ericsson would also suggest to discuss this further. Samsung also isn't sure whether there is really a gain in extending the time so much. Gemalto thinks it would be useful if the UE could assume longer validity. MediaTek thinks we should first understand the probably change rate. Also, we need to decide whether this covers the PSM time. MediaTek thinks so.
=> Exception 1.9: Discuss further whether the validity time can be increased (impact on required change rate) and whether this requires an increase of the value tag range
- 1.15: Intel thinks that EAB does not need to be supported. Huawei thinks we should support also EAB and if we really have to drop one, we should drop ACB. Samsung agrees with Huawei that EAB should be supported. ALU also agrees.
=> Proposal 1.15: In addition to ACB, EAB is also supported with the same conditions as in legacy.
=> Clarification: 1.21: frequency refers to the periodicity
Proposal 1.25
- Huawei thinks that RAN1 should inform us about new parameters.
=> Exception 1.25: This is only a working assumption subject to decision by RAN1.
Proposal 2.1:
- Samsung thinks that we can wait for RAN1 decision. CATT thinks that we also need to think about TDD.
=> Continue discussion
Proposal 2.2
- Huawei thinks that to maintain commonality with existing specification, we should support those modes.
=> CSFB, SSAC and ACB skip are needed for Rel-13 LC/EC SIB supporting the corresponding functionality (conditionally mandatory as today)
=> Noted

R2-153616 RRC details for Rel-13 low complexity and coverage enhanced UEs; Erisson; discussion;
=> Noted

R2-153677 Narrowband SIB1x Contents; Alcatel-Lucent Telecom Ltd; discussion;
-
Discussion:
- ALU thinks that the savings by a critical extension would be larger than what Ericsson calculated but would like to check this further. Ericsson would be fine with optimizations if they bring a significant benefit. Intel thinks that we should re-use the fields of SIB1 as much as needed but create a new SIB1 message. Sony thinks it requires a very careful trade-off between overhead and specification maintenance.
- ALU wonders whether it would be an option to inherit the current SIB1 extensions into a new SIB1bis. Ericsson thinks that the extensions are a reason why there is little benefit of creating a new SIB1bis structure: As soon as we add one non-critical extension to that new SIB1bis, we get that overhead anyway. MediaTek does not have a strong view and agrees with Sony that one has to do a trade-off. Huawei supports Ericsson's proposal to re-use the existing structure.
- Ericsson thinks that due to the limited granularity of the SIB1bis size that can be addressed in MIB, there will anyway be padding overhead. Therefore, an optimization of a few bits in SIB1bis will likely not result in any saving.

Working Assumption

1 Create an extension to BCCH-DL-SCH message class.

2 Denote the field and type identifiers as systemInformationBlockType1bis-r13 and SystemInformationBlockType1bis-r13 respectively.

3 Use SIB1 structure for SIB1bis.

4 The UE shall consider all fields with the same identifier name as the same field even if

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the fields are present in different SIB instances.

5 Whenever the UE acquires SIB or SIB1bis new field value shall replace the old one and absent field shall be released if specified as Optional Release (OR).

6 If a mandatory present field is not needed for SIB1bis, the UE shall ignore it and delete any stored value of the field.

=> Noted

R2-153795 System Information Change; MediaTek Inc.; discussion;
Proposal 1:
- Samsung wonders if a paging based mechanism is really efficient for extended coverage. LG thinks that a notification mechanism is useful but agrees that a paging mechanism may be inefficient. MediaTek considered that the UE could receive a notification ones it wakes up but agrees that the existing paging record may not be efficient for this purpose. Ericsson thinks that the need for a notification mechanism comes from the possibility that e.g. the paging configuration changes and then a UE would not be reachable anymore.

Proposal 2:
- Intel would prefer to leave this to RAN1 who is currently discussing this. Ericsson explains that RAN1 has a working assumption that there should be a M-PDCCH for scheduling the paging message.

Proposal 3
- Intel clarifies that this has already been agreed as part of the email discussion.

Proposal 5
- Sony thinks that an alternative would be to release the UE to IDLE. This might be worth considering that it does not happen often. Ericsson agrees with Sony and thinks that the NW can decide whether the change requires releasing the UE immediately or whether it can still complete its data transfer. Huawei agrees that such a complex solution is not needed. MediaTek would also be OK to release the UE to IDLE. CATT agrees that the UE could be released to IDLE and be required to read SI only in IDLE.
- Ericsson thinks that the NW could also provide updated SIB1/2 content to the UE via dedicated signalling.

Agreements

1 Both value tag and Notification/Paging mechanisms are supported for system information change for LC UEs and UEs in EC.

2 RAN2 assumption, for RAN1 to confirm: It is possible to notify the IDLE UE of a system information update using the control channel (M-PDCCH) while avoid sending a paging record on the shared channel.

5 The UE is not required to detect SIB change while being in RRC CONNECTED. The NW may release the UE to IDLE if it wants the UE to acquire changed SIB or provide the updated SIB by dedicated signalling.

=> Noted

R2-153372 MTC SIB transmission; Huawei, HiSilicon; discussion;
R2-153711 SIB for Rel-13 low complexity and coverage enhanced UEs; Ericsson; discussion;
R2-153247 SI change notification for Rel-13 MTC UEs; LG Electronics Inc.; discussion;
R2-153276 Open aspects on system information messages for Release-13 low complexity UEs and enhanced coverage; Intel Corporation; discussion;
R2-153335 Further Considerations on SIB Transmission; CATT; discussion;
R2-153638 Access barring mechanisms for MTC UEs; NEC; discussion;
R2-153641 SIB content relevant; NEC; discussion;
R2-153716 MIB for Rel-13 low complexity and coverage enhanced UEs; Ericsson; discussion;
R2-153756 MIB and SIB Considerations for MTc Low Cost and Enhanced Coverage; Fujitsu; discussion;
R2-153778 SIB1 scheduling for Rel-13 MTC; Samsung Electronics Co., Ltd; discussion;
Above 10 Tdocs not treated

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7.4.3 Random Access

R2-153717 Random access for Rel-13 low complexity and enhanced coverage UEs; Ericsson; discussion;
Proposal 1:
- ZTE wonders whether this means that the UE has to follow the same repetition pattern and frequency allocation than a LC UE in EC. ZTE thinks that it is then not possible to determine based on RA whether this is a normal complexity UE or a LC UE. Ericsson agrees and thinks that the NW could differentiate only later. ZTE thinks that this contradicts the Observation 1 in the paper.

Proposal 2:
- Samsung thinks that the criteria could be left up to UE implementation.

Proposal 8:
- CATT, Nokia Networks, Huawei and Samsung think that the repletion factor should be derived from the RAR or PRACH repetition level rather than being scheduled in the UL grant in RAR. Ericsson thinks that we lose flexibility. Huawei thinks we don't need this flexibility for Msg3. LG thinks that RAN1 is still discussing the resource allocation.

Agreements

1 Rel-13 "normal complexity" UEs in enhanced coverage use the same random access resources as a Rel-13 low complexity UEs in the same enhanced coverage level.

2 In addition to PRACH resource sets and corresponding PRACH repetition factor (PRACH repetition number), system information for Rel-13 LC/CE UEs should include…
1. Selection criterion (measurement threshold, pending RAN1/4 confirmation) for determining the initial PRACH coverage level, and
2. Number of maximum preamble transmission attempts per coverage level.

3 Confirm the following RAN1 agreement: RAR time/frequency resource and repetition factor (either for PDSCH or M-PDCCH) are derived from the used PRACH resources.

4 For Rel-13 UEs in extended coverage, RA response window duration is extended based on the RAR repetition factor.

6 Uplink grant in RAR is used for the initial HARQ transmission of Msg3 for Rel-13 low complexity and coverage enhanced UEs.

7 Support HARQ with repetitions for all unicast transmissions after RAR.

FFS whether the repetition factor is also in the RAR or provided/derived by other means

=> Noted

✉ **[91#24][LTE/MTC] Timer handling for extended coverage (Ericsson)**
-Discuss how MAC and RRC timers relevant for RA and connection establishment need to be extended for UEs in extended coverage.
=> Intended outcome: Email discussion summary to the next meeting

R2-153673 Considerations on RACH for LC-MTC; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153278 Considerations on random access procedure for Release-13 low complexity UEs and enhanced coverage; Intel Corporation; discussion;
R2-153357 Consideration on RACH procedure in coverage enhancement; Huawei, HiSilicon; discussion;
R2-153451 Random Access procedure for Rel-13 MTC UE; NEC Corporation; discussion;
R2-153485 Consideration on random access for R13 eMTC ; CATT; discussion;
R2-153486 Consideration on random access for further MTC enhancement; ASUSTEK COMPUTER (SHANGHAI); discussion;
R2-153607 Random access procedure for enhanced coverage UEs; Nokia Networks; discussion;

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R2-153736 Remaining open issues related to Random Access procedure; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153802 RAR transmission for Rel-13 MTC; KT Corp.; discussion;
R2-153832 Random Access considerations for Rel13 eMTC; QUALCOMM CDMA Technologies; discussion;
Above 10 Tdocs not treated

7.4.4 Paging

R2-153279 Paging for Release-13 low complexity UEs and enhanced coverage; Intel Corporation; discussion;
Proposal 4:

- Sierra Wireless is concerned that with this proposal all normal complexity UEs supporting extended coverage would utilize the resources intended for LC and EC UEs. Intel thinks that the alternative would be that for these UEs the NW first pages on the legacy paging resources and afterwards on the LC/EC paging resources. Chairman thinks that this would only work if the NW expects the UE to be in normal coverage. But if the NW expects the UE to be in extended coverage, it would page the UE with the new mechanism in the new resource while the UE monitors the legacy resource.

Agreements

1 The number of M-PDCCH repetitions corresponding to each coverage level will be known to the UE, for example based on information broadcast in system information

2 For paging, the M-PDCCH repetition pattern in both time and frequency domain is determined irrespective of the UEs coverage extension level.

3 RAN2 agrees as a baseline that it is acceptable for a UE to receive paging based only on its current coverage level. Final confirmation of UE behaviour can be made once RAN4 have concluded whether a UE can make a reliable estimate of its current coverage level.

FFS: Think more about….
A non-LC UE capable of EC operation but in normal coverage on a cell that supports EC, monitors …
a) paging according to the new paging mechanism introduced for Rel-13 LC UEs and EC if the NW expects the UE to be in extended coverage,
b) legacy paging if the NW expects the UE to be in normal coverage

5 A non-LC UE capable of EC operation and in normal coverage on a cell that does not supports EC (but may support Rel-13 LC UEs), monitors paging according to the legacy paging mechanism.

6 Starting subframes of the Rel-13 LC and EC paging mechanism can be determined in the same way as the paging occasion in the legacy paging mechanism.

7 Repetitions pattern in both time and frequency should be determined and specified by RAN1.

8 As part of the ongoing work, RAN2 should consider limiting the shorter DRX cycles and supporting extended DRX in combination with enhanced coverage operation.

=> Noted

R2-153737 Remaining Issues on Paging for MTC UE ; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153449 PF and PO for Rel-13 low complexity MTC; Samsung Telecommunications; discussion;
R2-153143 Mobility and power considerations for extended coverage paging; QUALCOMM CDMA Technologies; discussion;
R2-153337 Further Considerations on Paging for Coverage Enhancement UEs; CATT; discussion;
R2-153371 MTC Paging transmission; Huawei, HiSilicon; discussion;
R2-153448 Paging reception procedure in the enhanced coverage mode; Samsung Telecommunications; discussion;

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R2-153452 Coverage enhancement information for MTC paging; NEC Corporation; discussion;
R2-153640 Paging transmission to Rel-13 MTC UEs ; NEC; discussion;
R2-153718 Paging mechanism for Rel-13 low complexity and coverage enhanced UEs; Ericsson; discussion;
R2-153719 SI update for Rel-13 low complexity and coverage enhanced UEs; Ericsson; discussion;
R2-153835 Further considerations on paging for Rel.13 eMTC; QUALCOMM CDMA Technologies; discussion;
Above 11 Tdocs not treated

7.4.5 Mobility Support

✉ **[91#25][LTE/MTC] Mobility Support (MediaTek)**
-continue discussion on mobility support also taking into account recent input from RAN4
-Can address IDLE and CONNECTED mode
=> Intended outcome: Email discussion report to next meeting

R2-153127 Cell Reselection for Enhanced Coverage; Sony; discussion;
R2-153307 Connected mode mobility support for Rel.13 eMTC; QUALCOMM CDMA Technologies; discussion;
R2-153068 MTC cell re-selection and mobility implications; Gemalto N.V.; discussion;
[Moved from 7.4.2 to 7.4.5]

R2-153358 Mobility Enhancement in Emtc; Huawei, HiSilicon; discussion;
R2-153447 Cell Selection/Reselection for Rel-13 low complexity MTC; Samsung Telecommunications; discussion;
R2-153515 Further discussion on cell selection reselection parameters in EC; HTC Corporation; discussion;
R2-153606 Cell reselection for coverage enhanced UEs; Nokia Networks; discussion;
R2-153614 Connected mobility for Rel13 UEs in EC mode; Nokia Networks; discussion;
R2-153615 RLM/RLF for Rel13 low complexity UE or/and UE in EC mode; Nokia Networks; discussion;
R2-153713 Connected mode Mobility for LC and CE; Ericsson; discussion;
Above all Tdocs not treated

7.4.6 Other

Including output of [90#20][LTE/C-IoT] Data transmission targets for security-related procedures (Vodafone)

Security

R2-153518 Report of email discussion [90#20][LTE/C-IoT] Data transmission targets for security-related procedures ; Vodafone GmbH; report; Report of e-mail discussion [90#20];
[Moved from 7.4.1 to 7.4.6]

=> Noted

R2-153524 [draft] Reply LS on C-IoT/MTC data transmission targets for security-related procedures; Vodafone GmbH; LS out;
[Moved from 7.4.1 to 7.4.6]

- Intel thinks we should not attach the report as it is RAN2 internal. Ericsson agrees.
- Intel thinks that for answer 1 it should be clarified that the signaling overhead related to security procedures should be reduced. Ericsson agrees and thinks it is difficult to conclude whether 10% is good or not. Furthermore, the definition of “security procedures” is somewhat vague and unclear. Vodafone thinks we should clarify the 10%. ALU thinks that RAN2 could just say “the less the better” rather than a percentage. Vodafone thinks that one particular traffic model was discussed for which 10% should be targeted. Intel thinks that the numbers depend on a lot of factors.
- Intel thinks we should not add a reference to TR45.820 as that has nothing to do with RAN2 at this point in time.

=> CB: [MTC] An updated draft reply LS on C-IoT/MTC data transmission targets for security-related procedures may be provided in R2-153940 (Vodafone)

R2-153940 [draft] Reply LS on C-IoT/MTC data transmission targets for security-related procedures; Vodafone GmbH; LS out;

=> Change to “As one example, the overhead due to AS security… ”

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=> Change red font to black
✓ => With this change the LS on C-IoT/MTC data transmission targets for security-related procedures to SA3 is approved in R2-153969

Other

R2-153721 HARQ and TTI bundling for Rel-13 low complexity and coverage enhanced UEs; Ericsson; discussion;
- Intel thinks that 2, 3, 5, 7 have already been agreed. In particular the possibility to pre-configure several repetition levels by RRC and to indicate the actual repetition level by M-PDCCH. The timing relations should be specified by RAN1. But MAC would initiate the multiple subsequent transmissions attempts belonging to a bundle.
- Ericsson thinks we should discuss the MAC operation, i.e., whether we still want to support non-adaptive HARQ or whether all retransmissions have to be triggered by a new UL grant. Ericsson and Intel indicate that there will not be a PHICH but there may be a M-PDCCH DCI supporting non-adaptive retransmissions. This is still FFS in RAN1. Ericsson thinks that if there is this PHICH-like functionality on M-PDCCH, we should discuss whether MAC assumes that the UL TB has been ACKed or NACKed in case of absence of this indication. QC thinks that if we do not use this PHICH like signal to trigger retransmissions, we could also use asynchronous HARQ in UL. QC thinks that this would also allow changing the repetition level between transmissions and retransmissions. QC, Ericsson and Huawei think that we don't need non-adaptive retransmissions. Chairman thinks that all retransmissions should be scheduled explicitly by an UL grant. In absence of an UL grant the UE should assume that the process was successfully received, i.e., not trigger a retransmission by itself. Intel agrees but thinks that RAN1 is also discussing it.

=> Noted

R2-153280 Timer impact for Release-13 low complexity UEs and enhanced coverage; Intel Corporation; discussion;
R2-153281 UE battery lifetime evaluation for MTC/C-IoT use cases; Intel Corporation; discussion;
R2-153359 Consideration on the simultaneous transmission for MTC Ues; Huawei, HiSilicon; discussion;
R2-153446 DRX enhancements for Rel-13 low complexity MTC; Samsung Telecommunications; discussion;
R2-153789 CE level change procedure; LG Electronics Inc.; discussion;
Above 5 Tdocs not treated

7.5 WI: ProSe enhancements

(LTE_eD2D_Prox-Core, leading WG: RAN2, started: Dec. 14, target: Dec. 15, WID: RP-150441)

Time budget: 3 TU

Documents in this agenda item treated in the LTE Break Out session. (See Annex H)

Incoming LSs

Discovery

R2-153009 LS on public safety discovery (R1-152422; contact: Qualcomm); RAN1; LS in;
R2-153011 LS on Type 1 discovery for partial and outside network coverage (R1-153667; contact: Qualcomm); RAN1; LS in;
R2-153035 Reply LS to S2-150691 = R2-151011 on public safety discovery (S3-151524; contact: Qualcomm); SA3; LS in;
R2-153010 Reply LS to S3-151524 = on public safety discovery from SA3 (R1-153555; contact: Qualcomm); RAN1; LS in;
R2-153025 LS reply to S3-151524 = R2-153035 on Public Safety discovery (S2-151813; contact: Qualcoomm); SA2; LS in;
R2-153026 Reply LS to C1-151597 = R2-151021 on network feature support for ProSe Discovery (S2-152064; contact: Qualcomm); SA2; LS in;
R2-153034 LS on ProSe coarse proximity estimation based on path loss (S2-152699; contact: T-Mobile); SA2; LS in;

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R2-153024 LS reply to R2-151789 on ProSe Priorities (S2-151810; contact: Intel); SA2; LS in;
R2-153047 Reply LS reply to S2-151810=R2-153024 on ProSe Priorities (S1-152748; Contact: Qualcomm); SA1; LSin;
[Late]

=> Noted
R2-153030 LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (S2-152695; contact: Qualcomm); SA2; LS in;

7.5.1 UE-to-Network Relays

Including output of email discussion [90#25][LTE/ProSe] Relay UE initiation, discovery and selection/re-selection (ZTE)

7.5.1.1 Relay UE initiation/discovery

Relay UE initiation (e.g. network control / criteria for initiation / supported RRC modes)

Relay UE discovery (in coverage): The level of eNB control of discovery transmission initiation (Model B) (if any)

R2-153239 Considerations on Relay initiation; Huawei, HiSilicon; discussion;
R2-153254 Discussion on relay initialization procedure; Shenzhen Coolpad Technologies; discussion;
R2-153351 Consideration of initiation of ProSe UE-to-Network Relays; Kyocera; discussion;
R2-153426 Network control on relay UE initiation and activation; ITRI; discussion;
R2-153462 Initiation of ProSe UE-to-Network relay; Ericsson; discussion;
R2-153476 Considerations on supported RRC modes for relay discovery; Potevio Company Limited; discussion;
R2-153550 Discussion on UE-to-Network Relay initiation; General Dynamics UK Limited; discussion;
R2-153552 Behaviour of the UE-to-Network relay; General Dynamics UK Ltd; discussion;
R2-153572 Consideration on relay UE initiation and release process; SHARP Corporation; discussion;
R2-153626 Relay initiation and (re)selection for Public Safety UE; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153672 Relay Initiation; CATT; discussion;
R2-153675 Signalling considerations for relay UE initiation; Intel Corporation; discussion;
R2-153678 Further discusion on some relay related aspects; Samsung; discussion;
[Late]

R2-153732 Relay UE initiation and discovery; Qualcomm Incorporated; discussion;
R2-153734 Running stage 2 CR TS 36.300 to capture agreement on eD2D ; Qualcomm Incorporated; draftCR; 36.300; 13.0.0;
R2-153744 MCPTT service over relays: In-coverage to Out-of-coverage transition; BlackBerry UK Limited; discussion;
R2-153747 MCPTT service over relays: Out-of-coverage to In-coverage transition; BlackBerry UK Limited; discussion;
R2-153749 In coverage MCPTT UEs and UE-to-Network relaying; BlackBerry UK Limited; discussion;
R2-153764 Report of email discussion [90#25][LTE/ProSe] Relay UE initiation, discovery and selection/re-selection; ZTE (rapporteur); report; Report of e-mail discussion [90#25];
R2-153765 Discussion on relay initiation and discovery; ZTE, Ericsson, Intel, Interdigital; discussion;
R2-153786 Initiation of relay function; LG Electronics Inc.; discussion;
R2-153826 Inter-cell relay selection; LG Electronics Inc. ; discussion;

7.5.1.2 Relay UE selection/re-selection

Relay UE selection / re-selection (in coverage): The level of eNB control in relay selection (if any).

Is Uu link quality used for selection/reselection purposes? Criteria for selection/reselection.

Can the relay UE trigger reselection?

Level of eNB control for in-coverage UEs relay selection?

R2-153106 Considerations on trigger condition for relay reselection; Fujitsu; discussion;
R2-153107 The remote UE access to relay from neighbor cell; Fujitsu; discussion;

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R2-153128 Relay Measurements and Selection/Reselection; Sony; discussion;
R2-153282 Measurement on PSDCH; Intel Corporation; discussion;
R2-153283 Radio quality criteria for the (re)selection of the relay UE; Intel Corporation; discussion;
R2-153403 Procedure of Relay-UE selection and reselection; Huawei, HiSilicon; discussion;
R2-153475 Discussion on relay UE selection and re-selection; Potevio; discussion;
R2-153481 Relay UE selection in coverage; Ericsson; discussion;
R2-153482 Sidelink measurements for Relay Selection; Ericsson; discussion;
R2-153487 Discussions on L3-based UE-to-Network Relays communication procedure; CATT; other; [Withdrawn]

R2-153488 Discussions on L3-based UE-to-Network Relays communication procedure; CATR; discussion;
R2-153554 Relay selection for the in-coverage remote UE; General Dynamics UK Ltd; discussion;
R2-153597 Relay selection criteria for public safety discovery; Ericsson; discussion;
R2-153598 Transport channel for public safety discovery; Ericsson; discussion;
R2-153714 Relay Selection while in E-UTRAN coverage; Nokia Networks; discussion;
R2-153751 Relay UE Selection and Reselection Mechanisms; Qualcomm Incorporated; discussion;
R2-153766 Discussion on Remote UE's Relay discovery, selection and reselection; ZTE, Ericsson, Interdigital, Telecom Italia; discussion;
R2-153808 Relay Selection Issues; CATT; discussion;
R2-153830 Relay Selection Process and Radio Condition Evaluation; LG Electronics Inc.; discussion;

7.5.1.3 Connection establishment

Once relay selection is performed, what is the level of eNB control for connection establishment for out-of-coverage UEs (e.g. does the eNB authorise remote UEs)? What information is required to be transmitted to the eNB?

For in-coverage UEs, when is relay connection establishment done and what is eNB involvement?

AS involvement (UE and/or eNB) with NAS in deciding "when" to switch "allowed traffic" (as determined by higher layers) between Uu and PC5 (if any).

R2-153241 UE-to-Network Relay connection establishment; Huawei, HiSilicon; discussion;
R2-153261 Simultaneous Uu and PC5 link and SRB DRB mapping; PANASONIC R&D Center Germany; discussion;
R2-153461 Management of the PC5 link between the Relay UE and the Remote UE; Ericsson; discussion;
R2-153676 Authorization of out of coverage remote UEs for UE-to-Network relay; Intel Corporation; discussion;
R2-153731 Connection establishment for relay operation; Qualcomm Incorporated; discussion;
R2-153767 Discussion on the traffic switch between Uu and PC5; ZTE; discussion;
R2-153768 eNB involvement in remote UEs authorization and connection establishment; ZTE; discussion;
R2-153769 Considerations on the ProSe Layer-2 ID conflict issue; ZTE; discussion;
R2-153787 When to switch data transmission path; LG Electronics Inc.; discussion;
R2-153788 Connection establishment of remote UE; LG Electronics Inc.; discussion;
R2-153803 Analysis on the Knowledge of Remote UE by eNB; CATT; discussion;
R2-153822 Connection Establishment for UE-to-Network Relays; INTERDIGITAL COMMUNICATIONS; discussion;

7.5.1.4 Other

Resource allocation, one-to-one communication, etc

R2-153098 MAC PDU Addressing for Communication with UE-to-Network Relay; Samsung Electronics Co., Ltd; discussion;
R2-153100 Resource Allocation Aspects for UE-to-Network Relay; Samsung Electronics Co., Ltd; discussion;
R2-153129 Resource Allocation for Remote UE ; Sony; discussion;
R2-153142 Consideration of bearer mapping for ProSe UE-to-Network Relays; Kyocera Corporation; discussion;
R2-153235 Inter-frequency scenario and requirements for UE-Network relay; Huawei, HiSilicon; discussion;
R2-153252 Discussion on radio resource allocation for ProSe UE-to-NW relay; Shenzhen Coolpad Technologies; discussion;
R2-153284 Considerations on relay UE operation for packet relaying; Intel Corporation; discussion;
R2-153287 Support of one-to-one communication; Intel Corporation; discussion;

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R2-153300 Public safety perspectives on GCSE_LTE latency requirements for evaluating UE-Network Relay solutions; U.S. Department of Commerce; discussion;
R2-153404 Addressing for ProSe one-to-one communication; Huawei, HiSilicon; discussion;
R2-153555 Potential solutions for one-to-one communication addressing; General Dynamics UK Ltd; discussion;
R2-153575 QoS control in sidelink communications; Beijing Xinwei Telecom Techn.; discussion;
R2-153681 Considerations on Layer-2 ID Collision; CATT; discussion;
[Withdrawn]

R2-153682 Considerations on Layer-2 ID Collision; CATT; discussion;
R2-153770 Priority in UE-to-Network relay; ZTE; discussion;
R2-153805 Missing Packet due to Half-duplex in PC5; CATT; discussion;
R2-153806 Protocol Stacks for UE-to-Network Relay; CATT; discussion;
R2-153809 Layer-2 addressing for ProSe one-to-one communication; ETRI; discussion;
R2-153827 NAS operation by remote UE; LG Electronics Inc.; discussion;
R2-153829 Prioritization of PC5-S; LG Electronics Inc. ; discussion;

7.5.2 ProSe discovery in partial- and outside network coverage

RAN2 aspects of supporting out-of-coverage discovery

R2-153092 RAN2 Aspects of ProSe Discovery in Partial & OOC; Samsung Electronics Co., Ltd; discussion;
R2-153286 Support of public safety discovery in partial- and out-of-coverage; Intel Corporation; discussion;
R2-153592 Differentiation between PS discovery and non-PS discovery; Ericsson; discussion;
R2-153596 Out of coverage discovery; Ericsson; discussion;
R2-153599 Handling collisions between communication and discovery resources; Ericsson; discussion;
R2-153665 Discussion on ProSe Discovery in Partial and Outside Network Coverage; CATT; discussion;
R2-153742 Out-of-Coverage discovery for Public Safety; Qualcomm Incorporated; discussion;
R2-153771 RAN2 aspects of supporting out-of-coverage discovery; ZTE; discussion;

7.5.3 ProSe discovery for inter-carrier and inter-PLMN

R2-153091 Inter Carrier Discovery; Samsung Electronics Co., Ltd; discussion;
R2-153093 Timing Synchronisation for Inter Carrier Discovery Transmission; Samsung Electronics Co., Ltd; discussion;
R2-153094 Prioritisation Rule for Inter Carrier Discovery Transmission; Samsung Electronics Co., Ltd; discussion;
R2-153095 Handling Power Limitation during Inter Carrier Discovery Transmission; Samsung Electronics Co., Ltd; discussion;
R2-153096 Signaling Aspects of Gap for Discovery Reception; Samsung Electronics Co., Ltd; discussion;
R2-153097 Signaling Aspects of Gap for Discovery Transmission; Samsung Electronics Co., Ltd; discussion;
R2-153151 The uncoordinated and coordinated inter-PLMN ProSe discovery; ITRI; discussion;
R2-153236 Impact analysis of sidelink gap; Huawei, HiSilicon; discussion;
R2-153242 Discovery transmission on inter-carriers of intra-PLMN and inter-PLMN; Huawei, HiSilicon; discussion;
R2-153348 Sidelink gap details for direct discovery; Kyocera; discussion;
R2-153370 Possible issues in intra-PLMN and coordinated inter-PLMN; Kyocera; discussion;
R2-153424 Carrier Prioritization for Type 1 Inter-Carrier Discovery ; ITRI; discussion;
R2-153456 CN Impacts of inter-PLMN sidelink discovery transmission; Huawei, HiSilicon; discussion;
R2-153586 Inter-PLMN coordination for discovery transmission; TELECOM ITALIA S.p.A.; discussion;
R2-153594 Direct Discovery on non-PCell carriers; Ericsson; discussion;
R2-153595 On D2D gaps; Ericsson; discussion;
R2-153668 LS on ProSe authorization for inter-PLMN; CATT; LS out;
R2-153669 Discussion on Prose Authorization for Inter-PLMN; CATT; discussion;
R2-153715 Inter carrier ProSe discovery; Nokia Networks; discussion;
R2-153738 Draft LS on Intra-PLMN & Inter-PLMN D2D discovery; Qualcomm Incorporated; LS out;
R2-153753 Inter Frequency and Inter PLMN Discovery; Qualcomm Incorporated; discussion;
R2-153772 On ProSe Discovery for inter-frequency and inter-PLMN; ZTE; discussion;
R2-153801 Inter-carrier and Inter-PLMN Discovery issues; CATT; discussion;
R2-153824 Cell selection and measurements for non-PCel discovery; LG Electronics Inc. ; discussion;

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R2-153825 Discovery on non-primary frequency; LG Electronics Inc. ; discussion;
R2-153831 sidelink gap for discovery; LG Electronics Inc.; discussion;
R2-153848 Draft LS on inter-PLMN sidelink discovery transmission Huawei, HiSilicon LS out [Late]

R2-153850 Signaling Aspects of Gap for Discovery Reception Samsung Electronics Co., Ltd discussion

7.5.4 Group priorities for ProSe communication

Mapping between the logical channel priority and LCG .

Solutions to address prioritization in case of autonomous resource selection (e.g. solutions other than static one-to-one association between priorities and resource pools).

Need/requirement for pre-emption.

Are multiple transmissions to different destination IDs allowed within one SA period?

R2-153099 Priority Handling for D2D Communication; Samsung Electronics Co., Ltd; discussion;
R2-153101 ProSe Per-Packet Priority for DL traffic relayed by UE-to-Network relay; Samsung Electronics Co., Ltd; discussion;
R2-153164 Bearer mapping in UE-Network Relay; LG Electronics Inc.; discussion;
R2-153165 Providing PPP information to Relay UE; LG Electronics Inc.; discussion;
R2-153166 BSR and LCP supporting ProSe priorities; LG Electronics Inc.; discussion;
R2-153238 Priority handling based on ProSe Per Packet Priority; Huawei, HiSilicon; discussion;
R2-153257 Buffer status reporting/priority handling for ProSe communication; PANASONIC R&D Center Germany; discussion;
R2-153258 LCP procedure for ProSe communication; PANASONIC R&D Center Germany; discussion;
R2-153259 Multiple SA transmissions during one SC period; PANASONIC R&D Center Germany; discussion;
R2-153260 Resource pool selection for the autonomous resource allocation mode; PANASONIC R&D Center Germany; discussion;
R2-153285 Priority handling for UE autonomous resource selection; Intel Corporation; discussion;
R2-153295 Realizing off-network MCPTT priority and associated pre-emption on PC5; U.S. Department of Commerce; discussion;
R2-153480 Impact of PPP on user plane; Ericsson; discussion;
R2-153628 Priority handling for ProSE Communication; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153670 Priority for ProSe Communication; CATT; discussion;
R2-153720 Prioritization of sidelink transmissions with pre-emption via resource pools; SHARP; discussion;
R2-153729 Priority handling for Sidelink Direct Communication; Qualcomm Incorporated; discussion;
R2-153739 Priorities and Pre-emption for D2D communications; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153741 Draft response LS on D2D priority handling ; Qualcomm Incorporated; LS out;
R2-153743 Draft Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay; Qualcomm Incorporated; LS out;
R2-153773 Issues on Priority Handling; ZTE; discussion;
R2-153828 Support of pre-emption; LG Electronics Inc.; discussion;

7.5.5 Other

MCPTT related, etc

R2-153483 Floor control and pre-emption for MCPTT using ProSe; Ericsson; discussion;
R2-153674 Reply LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay; CATT; LS out; Draft reply LS to the LS from SA2 (S2-152695);

7.6 WI: LTE-WLAN Radio Level Integration

(LTE_WLAN_radio-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-151022)

Time budget: 1,5 TU

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7.6.1 Organizational

Incoming LSs

Running CRs

The technically endorsed running 36.300 CR after RAN2-90 is available in R2-152922 (Note: At this stage the CR just captures the agreements made so far. The actual stage-2 text and placement in the specification will be discussed further).

Including output of [90#24][LTE/WiFi] Update of running stage-2 CR (Intel)

R2-153763 Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement; Intel Corporation, China Telecom, Qualcomm Incorporated; CR; 36.300; 13.0.0; 0791; B;
- AT&T thinks that some things might need to be discussed
- Broadcom objects to endorsing this as baseline. Intel points out that this CR just reflects the agreements from the previous meetings.
- Broadcom thinks that in figure XX.1.2-1 there should be a gateway in the co-located scenario. Nokia Networks thinks that for the co-located case, the WLAN functionality is considered to be within the eNB. Broadcom would like to specify the WT node also in this scenario. Huawei agrees with Nokia Networks that in this scenario we don't need to specify or depict the WT. Intel agrees and thinks that this CR just reflects the agreements from the last meetings. Vodafone also agrees and would suggest to agree this running CR. CMCC also agrees that there is no WT in the co-located case. China Telecom also agrees with Intel. DT would also like to endorse the CR. Cisco is also OK with the CR
- Cisco thinks that for 2C we have not agreed that there has to be flow control only from the WT. Intel thinks that the details will be discussed in RAN3. QC and Ericsson think that so far we agreed that the flow control comes from the WT. If we agree that it can also come from the UE, that will be added.

=> Add an FFS that we will discuss whether the flow control feedback can alternatively come from the UE.

- Broadcom thinks that also uplink should be supported for the switched bearer.
- Broadcom objects to the running CR. Chairman clarifies that this version just captures what we agreed so far. Other aspects will be discussed in this and following meetings.
- With this change the running CR is revised in R2-153941.

R2-153941 Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement; Intel Corporation, China Telecom, Qualcomm Incorporated; CR; 36.300; 13.0.0; 0791 R1 B; Rel-13; LTE_WLAN_radio-Core

=> revised in R2-153970

R2-153970 Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement; Intel Corporation, China Telecom, Qualcomm Incorporated; CR; 36.300; 13.0.0; 0791 R2; B;

✉ **[91#15][LTE/WiFi] Running 36.300 CR (Intel)**
-Incorporate the agreements of this meeting in the latest endorsed CR
-Clarify the figure
-Incorporate RAN3 CR into this CR
=> Intended outcome: Technically endorsed 36.300 CR in R2-153972 0791 R3

7.6.2 LTE+WLAN Aggregation

7.6.2.1 Control Plane Architecture and Functionality

R2-153820 WLAN Selection and Mobility ; QUALCOMM CDMA Technologies; discussion;

=> Noted

R2-153663 WLAN aggregation, Review of differences to DC; Samsung; discussion;

Figure 1:

=> Change AP/SeNB to WT

=> Clarify that WeNB addition is initiated by the eNB

=> Add confirmation messages after step 8 from the WT to the eNB

=> Remove steps 9 and 10.

=> Figure is agreed as baseline and should be refined further during this week

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=> Coexistence issues such as relation to user preferences and ANDSF is to be discussed by SA2
=> Status indication message (including association confirmation) from UE to eNB if FFS

Discussion:
- Broadcom proposes to use ANDSF instead.
- Intel prefers the procedure described by Samsung. Intel thinks that we do not need to care at all about mobility within a mobility set. The call flow presented by Samsung is sufficient to capture all cases. Huawei also supports the Samsung approach and points out that we agreed that meeting that mobility across different mobility sets is under network control and based on measurements.
- Nokia Networks wonders in which direction the addition request is supposed to go. Nokia Networks thinks it should come from the eNB. Samsung intends that the eNB initiates this step.
- CATT thinks that the UE should send an indication to the eNB after successful association. Samsung thinks that the WT should indicate that to the eNB.
- MediaTek wonders at which point in time the association can happen. BlackBerry agrees that the association could happen at any time. Ericsson thinks that it shall happen after step 6 and 7 as shown here. Intel agrees with Ericsson that it cannot happen at any time as the WT has to be prepared.

Agreements

0 A mobility-set is a set of one or more BSSID/HESSID/SSIDs. Mobility across the APs belonging to a mobility set is transparent to E-UTRAN, i.e., the UE does not inform the eNB about such intra-mobility-set mobility.

1 All APs belonging to a mobility set share a common WT as termination point for CP and UP.

2 There may be multiple mobility sets within a WT

3 A UE is connected with at most one mobility set at any point in time.

=> Noted

R2-153693 Signalling flows for LTE-WLAN aggregation over Xw and RRC; Ericsson; discussion;
R2-153150 UE behaviours of different UE and Network conditions in LTE-WLAN integrated Network Environment; Samsung R&D Institute UK; discussion;
[Late]

R2-153557 WLAN link monitoring and failure report for LTE-WLAN aggregation and interworking enhancement; Huawei, HiSilicon; discussion;
R2-153081 Handling of WLAN UE Capability & User Preferences; Samsung R&D Institute UK; discussion;
[Late] [Moved from 7.6.4 to 7.6.2]

R2-153071 Control plane design for LTE-WLAN radio level integration; MediaTek Inc.; discussion;
R2-153078 Mobility handling for LTE-WLAN aggregation; Samsung R&D Institute UK; discussion;
[Late]

R2-153079 LTE handover during LTE-WLAN aggregation; Samsung R&D Institute UK; discussion;
[Late]

R2-153080 WLAN Activation/Deact during LTE-WLAN aggregation; Samsung R&D Institute UK; discussion;
[Late]

R2-153109 Discussion on Architecture and Procedure of C-plane; CATT; discussion;
R2-153110 Discussion on mobility procedures of aggregation bearer; CATT; discussion;
R2-153136 UE capabilities for LTE-WLAN Integration; Nokia Networks; discussion;
R2-153137 RRC for LTE-WLAN aggregation; Nokia Networks; discussion;
R2-153138 RLM for LTE-WLAN aggregation; Nokia Networks; discussion;

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R2-153169 UE requirements for LTE-WLAN interworking/integration; SAMSUNG Electronics Co., Ltd.; discussion;
[Moved from 7.6.4 to 7.6.2]

R2-153212 Consideration on the QoS guarantee in LTE-WLAN aggregation; China Mobile Com. Corporation; discussion;
[Moved from 7.6.3 to 7.6.2]

R2-153248 WLAN Mobility with WLAN Group; MediaTek Inc.; discussion;
R2-153343 Consideration on mobility aspect for LTE-WLAN aggregation; China Telecommunications; discussion;
R2-153347 Discusson on the configuration of AP group; ZTE Corporation; discussion;
R2-153433 Discussion on the configuration of a group of APs; ITRI; discussion;
R2-153434 Completion of AP selection; ITRI; discussion;
R2-153436 Procedure of LTE-WLAN Aggregation; ITRI; discussion;
R2-153438 Discussion on WLAN Authentication of LTE-WLAN Aggregation; ITRI; discussion;
R2-153553 Setup procedure of LTE-WLAN aggregation; Huawei, HiSilicon; discussion;
R2-153617 Further consideration of control plane issues for LWA; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153689 Mobility procedures for LTE-WLAN aggregation; Ericsson; discussion;
R2-153699 LWA and UE mobility; NEC; discussion;
R2-153725 Discovery and selection of a network that provides cellular – WLAN aggregation; BROADCOM CORPORATION; discussion;
R2-153726 Discussion on LWA CP/UP termination ; MediaTek Inc.; discussion;
R2-153727 Providing per bearer QoS handling over WLAN; BROADCOM CORPORATION; discussion;
R2-153754 WLAN Reliability with LTE+WLAN Aggregation in LTE R13; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153813 Policing, Authorization, and Charging for LTE/WLAN Aggregation; QUALCOMM CDMA Technologies; discussion;
R2-153814 LTE/WLAN aggregation mobility aspects ; MediaTek Inc.; discussion;
R2-153816 The coexistence of LTE/WLAN aggregation and Rel-12 interworking; LG Electronics Inc.; discussion;
R2-153819 Signaling for LTE/WLAN Aggregation; QUALCOMM CDMA Technologies; discussion;
R2-153846 WLAN aggregation and interworking mobility procedures; BlackBerry UK Limited; discussion; [Late]

Above 36 Tdocs not treated

✉ **[91#26][LTE/WiFi] Radio Link Monitoring for WLAN aggregation (Huawei)**
=> Intended outcome: Email discussion summary to the next meeting

7.6.2.2 User Plane Architecture and Functionality

R2-153111 Further Discussion on UP Architecture of LTE-WLAN Aggregation; CATT; discussion;
=> Noted

R2-153549 Further discussion on the user plane related issues for LTE-WLAN aggregation; Huawei, HiSilicon; discussion;
-

- LG thinks that we should specify a separate layer with its own header. This layer then determines the corresponding PDCP entity and delivers the packet accordingly.
- IDT thinks that we can avoid adding this if we instead use multiple virtual MAC addresses. TCL agrees with IDT. QC thinks that a separate header is easier. Intel also agrees that a new header is easier. Broadcom thinks that the use of virtual MAC addresses for separating bearers is already supported.
- BlackBerry wonders whether the WT is still supposed to treat bearers differently. QC thinks that this header does not preclude this. It is only for bearer identification on the UE and eNB side.
- CATT thinks the bearer ID should be added at the WT.
- Broadcom does not want a new header for the bearer ID. Nokia Networks and LG would first like to understand how the virtual MAC address solution would work. Broadcom also suggests to discuss it further based on contributions

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Informal show of hands:
a) Bearers are distinguished by a bearer ID: 20
b) Bearers are distinguished by other means (e.g. virtual MAC address): 5

- Broadcom and IDT object to the separate bearer ID. AT&T would like to have a discussion on the MAC address solution before making a decision.

- Intel thinks that using an EtherType would be much simpler. Broadcom does not agree with that. TCL also supports EtherType. Cisco thinks that packets with unknown EtherType might be dropped in legacy APs. Broadcom thinks that EtherType will need a number of changes to modem and AP. ZTE thinks that IP has advantages in terms of routability but would also be OK with EtherType. Huawei thinks that it is not a problem to support new EtherType since products need to be upgraded anyway.
- When checking by the end of the meeting week, the bullets below were agreeable

Agreements

1 The bearer ID is added by the eNB

2 The bearer ID is placed into a separate header

=> Noted

R2-153724 User Plane Architecture solutions based on DuCo Solution 2C; BROADCOM CORPORATION; discussion;
R2-153183 2C vs 3C; LG Electronics Inc.; discussion;
R2-153104 Architecture and protocol details for LWA; Fujitsu; discussion;
R2-153113 Flow Control for LTE-WLAN aggregation; CATT; discussion;
R2-153139 Functions and termination of adaptation layer in LTE-WLAN aggregation; Nokia Networks; discussion;
R2-153140 Flow control for LTE-WLAN aggregation; Nokia Networks; discussion;
R2-153184 Discussions on User Plane aspects of LTE-WLAN aggregation; LG Electronics Inc.; discussion;
R2-153344 Considerations on the adoption of adaption layer in the user plane for LTE-WLAN aggregation; China Telecommunications; discussion;
R2-153928 Considerations on the adoption of adaption layer in the user plane for LTE-WLAN aggregation China Telecommunications discussion
R2-153349 Consideration on the adaptation entity in WT; ZTE Corporation; discussion;
R2-153352 Discussion on the interface between WT and UE; ZTE Corporation; discussion;
R2-153439 Analysis of the user plane architecture and functionality for LTE/WLAN aggregation; ITRI; discussion;

R2-153513 User Plane Aspects of LWA; Intel Corporation; discussion;
R2-153683 Flow control in LTE-WLAN Aggregation; Ericsson; discussion;
R2-153843 Flow control in LTE-WLAN Aggregation; Ericsson; discussion; revision of R2-153683; [Withdrawn]

R2-153685 User plane aspects of LTE-WLAN aggregation; Ericsson; discussion;
R2-153844 User plane aspects of LTE-WLAN aggregation; Ericsson; discussion; revision of R2-153685; [Withdrawn]

R2-153723 User Plane Architecture solutions based on DuCo Solution 3C; BROADCOM CORPORATION; discussion;
R2-153728 On the need of separating user plane solutions for LTE-WLAN Radio Level Integration based on Dual Connectivity (DC) 3C and 2C; BROADCOM CORPORATION; discussion;
R2-153755 Quality-of-Service (QoS) with LTE+WLAN Aggregation in LTE R13; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153759 Bearer Architecture for LTE+WLAN Aggregation in LTE R13; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153804 Details of LWA Adaptation Layer; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153086 User plane related issues for LTE-WLAN aggregation; Huawei, HiSilicon; discussion; [Withdrawn]

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Above 20 Tdocs not treated

7.6.3 Interworking Enhancements

R2-153170 Overall operational procedure for LTE-WLAN interworking; SAMSUNG Electronics Co., Ltd.; discussion;

Proposal 2:
- Ericsson wonders how detailed the capabilities are supposed to be. Samsung thinks that in order to configure the measurements the NW needs to know the supported WLAN bands. MediaTek agrees with Ericsson that we might not need to have all details. Nokia Networks thinks that the eNB needs to know how measurements can be configured.
- Broadcom thinks that the user might not want to provide this information to the network.
- QC thinks that the NW also needs to know the WLAN version. Apple thinks that this information does not need to be provided to the NW. ZTE agrees with Samsung and QC. Vodafone agrees that at least the bands need to be indicated. Need for additional information could be discussed later. Huawei agrees that measurements are part of this work and to configure those the NW needs to know the bands. BlackBerry thinks that the bands are needed but is not sure about the version.
- DT agrees that the bands need to be indicated in order to configure measurements. Nokia Networks agrees as well.
- Broadcom thinks that the supported bands are not sufficient to send a steering a command. Huawei explains that the purpose of the capabilities is just to allow configuring measurements which will then allow proper steering. Nokia Networks thinks that this does not affect how WLAN works but only enables the eNB to configure a measurement.

Proposal 3:
- Intel thinks that the channel will already imply the country and operating class.
- Samsung thinks that we need to decide whether the measurements allow filtering in the frequency domain so that the NW gets measurements only for selected frequencies. Huawei agrees but believes that a white list might be sufficient. QC thinks that filtering will help in terms of power consumption.
- Broadcom disagrees that the NW can configure measurements for a specific band or channel.

Proposal 4:
- Ericsson is not convinced that frequent messages are needed every time the UE changes something. Samsung thinks that we can discuss the status exchange maybe separately. Intel thinks that some kind of status report could be needed but the details could maybe be discussed in context of aggregation. QC also thinks that some kind of indication is needed. IDT agrees. Samsung thinks that the indication should only be sent once the network configures WLAN measurement. ZTE thinks we should re-use an existing message. Kyocera thinks that we might also need a kind of reject message.

Proposal 5:
- Ericsson and MediaTek think that we already agreed this.
- Broadcom does not agree that the mobility set may comprise the BSSID

Agreements

1 To have separate capability bits for interworking and aggregation.

2 The UE indicates the supported WLAN bands in the capability signalling for interworking and aggregation.

3 UE is configured with measurements for WLAN using the WLAN numerologies (e.g. 'Country', 'Operating Class', and/or 'Channel Number') (same principle as for CDMA2000).

=> Noted

R2-153551 Traffic steering method for interworking enhancement; Huawei, HiSilicon; discussion;
=> Noted

R2-153589 Further details on interworking enhancements ; Nokia Networks; discussion;
=> Noted

R2-153646 Further discussion on WLAN interworking for Rel-13; Ericsson; discussion;

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Discussion:

- Huawei thinks that the IDLE mode behaviour of Rel-12 is problematic anyway. Huawei thinks that if the NW releases the UE to IDLE after steering the traffic to WLAN, the UE keeps the traffic in WLAN until the WLAN is about to fail. MediaTek thinks that the Rel-12 behaviour would certainly be preferable for this case.
- BlackBerry thinks that the question is whether the steering command received in CONNECTED is still valid when the UE moved to IDLE. BlackBerry thinks that using a steering command in CONNECTED and the Rel-12 solution in IDLE is problematic. MediaTek thinks that a similar mechanism to the Rel-12 timer could be considered.
- Nokia Networks thinks we need to determine whether the Rel-13 UE uses the broadcast information from Rel-12. QC thinks that a UE configured to steer traffic while in CONNECTED may decide by itself what to do when going to IDLE rather than using Rel-12 rules. IDT thinks that by providing dedicated thresholds, it will ensure alignment with the Rel-12 behaviour. Nokia Network thinks that the NW should be able to control both IDLE and CONNECTED mode. MediaTek agrees with that.
- Intel supports the Huawei approach and to leave IDLE mode behaviour up to the UE. Nokia Networks thinks we should not leave it to the UE what to do in IDLE. Sony would support the Ericsson suggestion since it would be a simple enhancement of the Rel-12 solution. CATT thinks that the NW should have control in IDLE and CONNECTED. ZTE agrees as well. Huawei thinks we could define cases and conditions in which the UE moves traffic back to LTE. Therefore, it would be still under network control. Ericsson thinks that the re-use of the rules still ensure full network control. ALU also agrees that in IDLE the RAN rules should be applied and that the concept of Rel-12 mechanism for connected could be re-used. Samsung is not sure whether the operator would use both the Rel-12 and the Rel-13 solution.

=> Noted

R2-153070 Some considerations for network-controlled LTE-WLAN radio level interworking; MediaTek Inc.; discussion;
R2-153082 Inactivity reporting in enhanced LTE-WLAN interworking; Samsung R&D Institute UK; discussion;

[Late]

R2-153114 Procedures of Interworking Enhancements; CATT; discussion;
R2-153412 RAN assistance parameters for Idle UE in interworking enhancement; Kyocera; discussion;
R2-153413 UE offload confirmation for interworking enhancement; Kyocera; discussion;
R2-153619 Need of UE interworking status for LTE-WiFi interworking; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153625 User preference aspects of WLAN aggregation and interworking; BlackBerry UK Limited; discussion;
R2-153645 Connection failure report; Ericsson; discussion;
R2-153647 Threshold based WLAN interworking; Ericsson; CR; 36.331; 12.6.0; 1893; B;
R2-153648 Parameter handling for WLAN interworking; Ericsson; discussion;
R2-153649 Parameter handling for WLAN interworking; Ericsson; CR; 36.331; 12.6.0; 1894; B;
R2-153650 Parameter handling for WLAN interworking; Ericsson; CR; 36.304; 12.5.0; 0274; B;
R2-153798 On acknowledging WLAN aggregation and traffic steering commands; MediaTek Inc.; discussion;
Above 13 Tdocs not treated

7.6.4 RRM Measurements

RRM measurement framework both, for LTE+WLAN Aggregation and Interworking

✉ **[91#27][LTE/WiFi] RRM Measurement Framework (Intel)**
=> Intended outcome: Email discussion summary to the next meeting

R2-153642 WLAN measurement reporting; Ericsson; discussion;

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R2-153115 RRM Measurements for WLAN; CATT; discussion;
R2-153168 Measurement objects for WLAN; SAMSUNG Electronics Co., Ltd.; discussion;
R2-153243 RRM Measurement for LWA and NCIWK; MediaTek Inc.; discussion;
R2-153253 Discussion on RRM Issues for LTE WLAN Interworking Enhancement; Spreadtrum Communications; discussion;
R2-153342 Considerations on the measurement for LTEWLAN aggregation and interworking enhancements; China Telecommunications; discussion;
R2-153384 Consideration on WLAN measurement for the LTE/WLAN aggregation and interworking enhancement; ZTE Corporation; discussion;
R2-153414 Consideration on WLAN measurement; Kyocera; discussion;
R2-153428 Update of WLAN identifiers for measurement and reporting; ITRI; discussion;
R2-153430 Consideration of user preference; ITRI; discussion;
R2-153556 RRM measurements for LTE-WLAN aggregation and interworking enhancement; Huawei, HiSilicon; discussion;
R2-153590 Mobility and RRM measurements for LTE-WLAN radio aggregation and interworking; Nokia Networks; discussion;
R2-153644 Introducing WLAN measurements; Ericsson; CR; 36.331; 12.6.0; 1892; B;
R2-153643 Layer-3 filtering for WLAN measurements; Ericsson; discussion;
R2-153661 RRM measurement framework for WLAN aggegation/ interworking; Samsung; discussion;
[Moved from 7.6.1 to 7.6.4]

R2-153817 WLAN measurement framewor; LG Electronics Inc.; discussion;
R2-153821 UE Measurements of WLAN for LWA and Interworking Enhancement; QUALCOMM CDMA Technologies; discussion;
Above all Tdocs not treated

7.7 WI: Multicarrier Load Distribution in LTE

(LTE_MC_load-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-150611)

Time budget: 1 TU

Extension of Frequency Priorities

R2-153141 Extension of Frequency Priorities; Nokia Networks; discussion;
=> Noted
R2-153290 Extension of frequency priority; Intel Corporation; discussion;
=> Noted

Discussion:
- Intel wonders how the NW would determine proper sub-priority values with the Nokia Networks solution. Samsung thinks we could just consider it a value range extension and would not even need to touch 36.304. Intel thinks that also the new field would come without changes to 36.304.

=> We increase the value range of the existing field
- ZTE wonders whether this should also apply for inter-RAT reselection from UTRAN. Nokia Networks did not intend that but could consider it as well. ALU agrees that we should also do it for UMTS and GERAN

=> Apply the same value range extension for UMTS
=> Nokia Networks should provide updated CRs to the next meeting

CRs
R2-153210 Extending Frequency Priorities; Nokia Networks; draftCR; 36.331; 12.5.0;
R2-153211 Extending Frequency Priorities; Nokia Networks; draftCR; 36.304; 12.5.0;
Above 2 Tdocs not treated

Load Balancing Enhancements

R2-153153 Randomized threshold offset based reselection; ZTE Corporation, China Telecom; discussion;
=> Noted
R2-153262 Solutions addressing Multi-Carrier Load Balancing; Nokia Networks; discussion;
- Intel thinks that we are aiming for solutions that also support IDLE mode UEs. Nokia Network agrees that this might be an advantage to address IDLE UEs. Nokia Networks

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thinks that one could consider a mechanism where the NW re-configures priorities for a group of UEs e.g. by means of paging. Kyocera wonders how the NW would know which UEs' priorities to change.

=> Noted

R2-153775 Continuous vs one-shot distribution mechanism for reselection; Kyocera; discussion;

- Nokia Networks basically agrees with Proposals 2, 3, 4 and 5.
- ZTE thinks that such one-shot scheme could be useful in selected scenarios but believes that the continuous schemes are generally more applicable.
- Nokia Networks supports the observation 3 in this paper, i.e., continuous search for higher priority cells on another frequency will increase the power consumption. ALU thinks that we should go for a mechanism where the UE prioritizes continuously on frequency level. The cell specific inter-frequency search should not be run continuously. ZTE thinks that it is no worse than absolute higher priority configured for a carrier with spotty small cells. Samsung wonders whether reduced performance measurements apply only while the UE has not found a cell on the mixed coverage carrier. Nokia Networks thinks the reduced performance applies continuously.
- Samsung assumes that the UE should perform the re-evaluation periodically and only then the UE checks whether there are suitable inter-frequency cells.
- Samsung thinks that we should try not to interfere with existing absolute priority schemes. The randomization should only be between equal priority layers. ALU agrees that the absolute priorities might be mapped e.g. to subscriptions and we should avoid impacting such NW configurations with a new mechanism. ZTE thinks that randomization among equal priority layers will not be sufficient since a UE might thereby select another frequency with higher absolute priority. ZTE wants to enable randomization that could apply also to carriers with different absolute priorities.

- ALU thinks that we need some cell specific priorities. Secondly, we could discuss the randomization and whether it should be continuously or one-shot.
- ALU suggests to agree on support of cell specific priorities now and discuss by email until next meeting whether and how to randomize. ZTE would be OK with this proposal. ZTE would then also like to discuss by email whether and how to randomize.
- Vodafone thinks that cell specific priorities could make network configuration more complex.
- Huawei thinks that the consequence could be that a UE in good coverage of the macro cell on one carrier is moved to the cell edge of a prioritized cell on the other carrier. Kyocera agrees with Huawei's concern. ZTE thinks that this is no additional problem compared to today.

=> Adopt cell specific priorities as baseline

- LG and ZTE think that we also need a mechanism to distribute UEs between macro cells on different frequency layers. Nokia Networks thinks that randomization does not solve this problem. Nokia Networks thinks we should not start randomizing everything.

=> CB: [LTE/Load Balancing] Discuss further offline whether a randomization scheme is needed and whether it would be applicable to frequency- and/or cell specific priorities. (ZTE)

- ZTE reports that during offline discussions it was concluded that a solution to continuously randomize reselection is beneficial. ZTE suggests to discuss further whether in addition to a continuous randomization scheme also a one shot scheme is needed. Nokia Networks thinks that it was only agreed that a solution should be found that a solution fulfilling the requirements should be determined. But there was no agreement that this requires randomization. Nokia Networks suggests an email discussion to discuss possible solutions and to provide one joint proposal for the next meeting. Verizon agrees with ZTE but thinks that we can look at the solutions on the table and see which of those has most support. Verizon thinks that we should only discuss schemes relying on randomization. Nokia Networks thinks that the definition of that is unclear. Does it imply one-shot schemes? Verizon would just like to exclude further evaluation of dedicated priority schemes. Nokia Networks thinks that we should not exclude any solution.

=> Noted

✉ **[91#28][LTE/Load Balancing] Redistribution Schemes (ZTE)**
-Investigate advantages and benefits of schemes that can redistribute IDLE UEs (continuous randomization and one-shot mechanism)

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-Do not discuss existing dedicated reselection priorities provided during RRC connection release
-Aim to converge to one solution
=> Intended outcome: Email discussion report and possibly draft CRs to next meeting

R2-153105 Cell-specific probability setting; Fujitsu; discussion;
R2-153288 Stability evaluation for load distribution schemes; Intel Corporation; discussion;
R2-153289 Performance impact of different load distribution triggering mechanisms; Intel Corporation; discussion;
R2-153308 Solution for Idle load distribution; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153340 Text Proposal for measurement rules supporting CSP; LG Electronics Inc.; discussion;
R2-153402 Distributing idle UEs to multiple carriers; Huawei, HiSilicon; discussion;
R2-153406 Continuous vs one-shot distribution mechanism for reselection; Kyocera; discussion;
[Withdrawn]

R2-153407 Detailed solution of one-shot re-distribution mechanism; Kyocera; discussion;
[Withdrawn]

R2-153776 Detailed solution of one-shot re-distribution mechanism; Kyocera Corporation; discussion;
R2-153441 Probability based idle UE distribution for multicarrier environment; ITRI; discussion;
R2-153450 RS-SINR measurement condition triggered by RSRQ measurement for load balancing; LG Electronics Inc.; discussion;
R2-153621 Cell-specific prioritization for load balancing; Erisson; discussion;
R2-153667 Scope and main characteristics of idle load balancing solution; Samsung; discussion;
Above 11 Tdocs not treated

R2-153797 UE redistribution for load balancing; MediaTek Inc.; discussion;
[Withdrawn]

CRs
R2-153156 Support for Randomized threshold offset based reselection; China Telecom, ZTE Corporation; draftCR; 36.304; 12.5.0;
R2-153158 Support for Randomized threshold offset based reselection; China Telecom, ZTE Corporation; draftCR; 36.331; 12.6.0;
R2-153622 Cell-specific prioritization for idle mode load balancing (Alt 1); Ericsson; draftCR; 36.331; 12.5.0;
R2-153623 Cell-specific prioritization for idle mode load balancing (Alt 2); Ericsson; draftCR; 36.331; 12.5.0;
R2-153624 Cell-specific prioritization for idle mode load balancing; Ericsson; draftCR; 36.304; 12.5.0;
Above 5 Tdocs not treated

7.8 SI: Further MDT enhancements

(FS_LTE_eMDT2, leading WG: RAN2, started: Mar. 15, target: Sep. 15, WID: RP-150472)

Time budget: 0,5 TU

TR

Agreed skeleton TR v0.3.0 is available in R2-152931.

CB: [LTE/MDT] An updated draft TR 36.880 may be provided in R2-153957 v0.3.1 (CMCC)
R2-153957 TR 36.880; Study on further enhancements of Minimization of Drive Tests (MDT) for E-UTRAN; v0.3.1
=> Remove Evaluation section
=> Updated styles
=> Updated abbreviations
✉ **[91#06][LTE/MDT] TR 36.880 (CMCC)**
=> Intended outcome: Agreed TR 36.880 v0.3.2 in R2-153971 for approval at RAN plenary

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=> RAN2 agrees that the SI is completed and can be closed

TPs

R2-153639 TP for TR 36.880; Huawei, HiSilicon, CMCC; pCR; 36.880; 0.3.0;
Not treated

Coverage Optimization

R2-153849 Enhanced Coverage Optimization use case; Nokia Networks; Disc
[Late]

- Kyocera wonders what the NW could do with a measurement for which the UE indicated that it was affected by IDC. Kyocera thinks the UE should just discard such samples. Nokia Networks thinks that it would help the NW to understand that the absence of a report was not due to lack of coverage but due to IDC. QC thinks that it is not necessary to report these results as the NW would for that location get other reports from other UEs. Ericsson agrees with QC that MDT relies on statistical information. Ericsson thinks that alternatively, the UE would have to provide more detailed additional information about the IDC interference. LG supports Nokia Network's proposal. ZTE agrees with Kyocera. MediaTek agrees that IDC coloured measurement reports should just be dropped. Nokia Networks thinks that the additional indication would be needed.
- Chairman wonders whether it would be agreeable that The UE omits measurements in the Logged MDT report that were affected by IDC interference. QC thinks that this would only work for UEs that support the IDC mechanism.
- Nokia Networks wanted to apply this also for RLF reports. MediaTek thinks that it could be more interesting to have an IDC indication in the RLF report.
- Intel wonders how this is supposed to work in connected. Nokia Networks thinks that in CONNECTED the NW knows from the IDC indication. But Nokia Networks would be fine to extend the indications to CONNECTED. MediaTek thinks that SA5 could log the IDC indications and thereby solve the issue. LG wants to flag also connected mode measurement reports. QC thinks that for connected mode there is no problem since the eNB will anyway solve the IDC problem when the UE reports it.

=> No need to do anything for connected mode.

Agreements

1 UEs supporting the IDC mechanism remove measurement from the Logged MDT report that were affected by IDC interference.

2 Consider indicating from the eNB whether measurements are collected while eICIC was configured. Alternatively, do not report those results to the TCE. (only SA5 impact)

=> Noted

R2-153338 Enhancement for Coverage Optimization; CATT; discussion;
R2-153389 Logged MDT under IDC; Kyocera; discussion;
R2-153445 Enhancements for Refined MDT Measurements; Samsung Telecommunications; discussion;
Above 3 Tdocs not treated

QoS metrics

R2-153191 Way forward on UL delay measurement ; CMCC, Qualcomm Incorporated, Huawei, Alcatel-Lucent, Samsung, ZTE, Intel, CATT, ITRI, Nokia Networks, China Telecom; discussion;

- LG thinks that this does not reveal any information about the actual transmission delay. Kyocera agrees with LG and thinks that the solution would not show the actual jitter.
- LG thinks that PHR does not reflect the coverage situation.
- MediaTek acknowledges that the proposal is simple and even though the quality might not very good, it could be acceptable.
- QC and Huawei think that this metric is not very accurate but gives at least a rough indication of the UL queuing delay which is not visible to the NW today. LG thinks that the goal was to have an accurate measurement.

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- LG thinks that the UE is not aware of the QCI. Therefore, it could only report the E-RAB ID. QC thinks that the UE knows the QCI on NAS level. MediaTek agrees that the UE has the QCI and reporting QCI makes the post processing much easier. ALU points out that the AS/NAS interactions are loosely specified which does not mean that the UE cannot access this information.

Agreements

2 UL PDCP queuing delay measurement should be performed per QCI per UE and should reflect the packet delay observed at UE's PDCP layer only (from packet arrival at PDCP upper SAP until the packet starts to be delivered to RLC)

=> Noted

R2-153182 UL packet delay measurement in MDT; LG Electronics Inc.; discussion;
R2-153785 Integrating MTSI QoE Metrics into MDT; Qualcomm Incorporated; discussion;
R2-153145 UL delay measurement; Nokia Networks; discussion;
R2-153146 MDT QoS metrics; Nokia Networks; discussion;
R2-153220 Reporting UL packet discard rate measurement per logical chanenl priority in MDT; LG Electronics Inc.; discussion;
R2-153386 Post processing procedure of UL latency measurements; Kyocera; discussion;
R2-153528 More consideration on MMTEL traffic measurement; ZTE Corporation; discussion;
R2-153530 UL delay measurement in MDT; ZTE Corporation; discussion;
R2-153783 UL delay measurement; Qualcomm Incorporated; discussion;
Above 9 Tdocs not treated

Call drop rate and setup delay

R2-153309 Monitoring VoIP call drop ; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
Proposal 2:

- MediaTek thinks it would be nice to avoid logging anything from IMS layer. Nokia Networks agrees.

Agreements

1 Include presence of a QCI 1 bearer at the time of RLF in the RLF report provided by the UE. The UE also indicates failure of subsequent re-establishment and NAS recovery.

=> Noted

R2-153391 Logging of latency in call establishment; Kyocera; discussion;
Not treated

Late or withdrawn

R2-153178 Reporting UL packet discard rate measurement per logical chanenl priority in MDT; LG Electronics Inc.; discussion;
[Withdrawn]

R2-153181 UL packet delay measurement in MDT; LG Electronics Inc.; discussion;
[Withdrawn]

R2-153221 Reporting UL packet discard rate measurement per logical chanenl priority in MDT; LG Electronics Inc.; discussion;
[Withdrawn]

R2-153529 UL delay measurement in MDT; ZTE Corporation; discussion;
[Withdrawn]

R2-153784 UL delay measurement; Qualcomm Incorporated; discussion;
[Withdrawn]

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7.9 WI: Dual Connectivity Enhancements

(LTE_dualC_enh-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-150490)

Time budget: 0 TU in main room (+1 TU in stage-3 UP session)

Documents submitted to this AI treated in the UP session. (See Annex G)

R2-153088 Further discussion on PDCP discard with split bearers; Nokia Networks; discussion;
R2-153089 Stage 3 Details of DC Enhancements; Nokia Networks; discussion;
R2-153090 Transmission of PDCP status report at PDCP data recovery; Nokia Networks; discussion;
R2-153148 PDCP data indication to MAC with threshold; LG Electronics Inc.; discussion;
R2-153149 Buffer status reporting and PDCP data transmission; LG Electronics Inc.; discussion;
R2-153155 Transmission of PDCP Control PDU in split bearer; LG Electronics Inc.; discussion;
R2-153157 PDCP Discard issue with UL split bearers; LG Electronics Inc.; discussion;
R2-153160 PDCP SDU discard in split bearers; LG Electronics Inc.; draftCR; 36.323; 12.4.0;
R2-153162 PDCP reordering enhancement; LG Electronics Inc.; discussion;
R2-153175 Kick off to work on SFN/subframe offset reporting; NTT DOCOMO, INC. (Rapporteur); discussion;
R2-153237 PDCP Discard; MediaTek Inc.; discussion;
R2-153256 Transmission of PDCP control PDUs for Split bearers; PANASONIC R&D Center Germany; discussion;
R2-153315 Delivery of PDCP PDU to RLC Layer for UL Split Bearer; Huawei, HiSilicon; discussion;
R2-153316 PDCP data transmission for UL split bearer; Huawei, HiSilicon; discussion;
R2-153317 PDCP Discard Issue for UL Split Bearer; Huawei, HiSilicon; discussion;
R2-153318 UL data transmission upon SCG-RLF for UL split bearer; Huawei, HiSilicon; discussion;
R2-153319 Over-scheduling problem for UL split bearer; Huawei, HiSilicon; discussion;
R2-153326 PDCP Control PDU for UL Split Bearer; Samsung Electronics Co., Ltd; discussion;
R2-153327 How to capture uplink split in the relevant specifications; Samsung Electronics Co., Ltd; discussion;
R2-153328 Introducing threshold based uplink split operation into the PDCP specification ; Samsung Electronics Co., Ltd; CR; 36.323; 12.4.0; 0140; F;
[Withdrawn]

R2-153329 Introducing threshold based uplink split operation into the RRC specification; Samsung Electronics Co., Ltd; draftCR; 36.331; 12.5.0;
R2-153330 On preventing PDCP SN gap due to discard timer; Samsung Electronics Co., Ltd; discussion;
R2-153336 Introducing threshold based uplink split operation into the PDCP specification ; Samsung Electronics Co., Ltd; draftCR; 36.323; 12.4.0;
R2-153383 Clarification of PDCP behavior for uplink split bearer; Kyocera; discussion;
R2-153387 Discussion on the PDCP discard issue in bear split; ZTE Corporation; discussion;
R2-153394 Draft CR_Improvement on the detection of discarded PDCP PDU; ZTE Corporation; draftCR; 36.323; 13.0.0;
R2-153443 Remaining Issues of Supporting Uplink Split Bearers; ITRI; discussion;
R2-153444 PDCP Discard Issue of Split Bearer; ITRI; discussion;
R2-153491 Clarifications on BSR of UL bearer split; ZTE Corporation; discussion;
R2-153507 Consideration on over-scheduling issue for uplink split; CATT; discussion;
R2-153520 Scheduling coordination between MeNB and SeNB; CATT; discussion;
R2-153522 Considerations on PBR of UL split bearer; CATT; discussion;
R2-153568 Over allocation problem on UL bearer split; NTT DOCOMO INC.; discussion;
R2-153703 Discussion on UL bearer split for Dual Connectivity: QoS guarantee; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153704 Discussion on UL bearer split for Dual connectivity: BSR triggers and timers; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153758 PDCP data transfer procedure for uplink bearer split; Ericsson; discussion;
R2-153760 PDCP data transfer procedure for uplink bearer split; Ericsson; CR; 36.323; 12.4.0; 0143; B;

7.10 WI: RAN enhancements for extended DRX in LTE

(LTE_extDRX-Core; leading WG: RAN2; started: Mar. 15; target: Dec. 15; WID: RP-150493)

Time budget: 1 TU

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Documents in this agenda item treated in the LTE Break Out session. (See Annex H)

7.10.1 eDRX for idle mode

Timer based vs. SFN based mechanism and other idle mode impacts

R2-153083 Extended DRX impact on idle mode UE measurement and cell reselection; Acer Incorporated; discussion;
R2-153108 SFN extension vs Timer based solution for extended Idle DRX cycle; Fujitsu; discussion;
R2-153124 UE preferred eDRX behaviour; Sony; discussion;
R2-153173 Paging Robustness for Extended Idle Mode DRX in LTE; MediaTek Inc.; discussion;
R2-153214 Impacts on system change acquisition for eDRX; LG Electronics Inc.; discussion;
[Withdrawn]

R2-153224 Analysis on IDLE mode extended DRX cycle solutions; Nokia Networks; discussion;
R2-153225 Analysis on IDLE mode extended DRX cycle solutions; Nokia Networks; discussion;
[Withdrawn]

R2-153240 Operator requirements for Idle-eDRX solution; NTT DOCOMO INC.; discussion;
R2-153250 Impacts on system change acquisition for eDRX; LG Electronics Inc.; discussion;
R2-153291 Analysis of extending DRX cycle solutions for idle mode; Intel Corporation; discussion;
R2-153339 Extending DRX Cycle in Idle Mode; HuaWei Technologies Co., Ltd; discussion;
R2-153385 Idle mode UE behaviour with Extended DRX; Kyocera; discussion;
R2-153422 Some Design Needs for extended DRX cycle; China Unicom; discussion;
R2-153432 On the length of eDRX in the Idle mode; Samsung Telecommunications; discussion;
R2-153435 On the ETWS/CMAS support in Rel-13 eDRX ; Samsung Telecommunications; discussion;
R2-153437 How to apply the extended DRX in the idle mode; Samsung Telecommunications; discussion;
R2-153440 SI update in the extneded IDLE DRX; Samsung Telecommunications; discussion;
R2-153442 Signalling for Rel-13 eDRX support; Samsung Telecommunications; discussion;
R2-153620 Comparison of eDRX concepts for RRC idle mode; Erisson; discussion;
R2-153680 Considerations for establishing a maximum idle mode eDRX time; Sierra Wireless, S.A.; discussion;
R2-153684 Considerations for Paging Occasion Change Indication in eDRX; Sierra Wireless, S.A.; discussion;
R2-153697 Considerations on RAN based and CN based approaches for extended idle mode DRX; QUALCOMM CDMA Technologies; discussion;
R2-153700 Discussion on solutions for extended idle mode DRX; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153735 Design Aspects of IDLE Mode eDRX; INTERDIGITAL COMMUNICATIONS; discussion;
R2-153793 Hyper-SFN vs Timer based eDRX; MediaTek Inc.; discussion;

7.10.2 eDRX for connected mode

RAN2 issues related to extending DRX up to 10.24s in connected mode.

Note: RAN-68 agreed that extended connected mode DRX cycle beyond 10.24 seconds is no longer pursued in this WI

R2-153085 RLF prevention without mobility enhancement for Connected Mode eDRX; Acer Incorporated; discussion;
R2-153172 Remaining Issues for Extended Connected Mode DRX in LTE; MediaTek Inc.; discussion;
R2-153174 [DRAFT] LS on extended connected mode DRX; MediaTek Inc.; LS out;
R2-153341 Extending DRX Cycle in Connected Mode; HuaWei Technologies Co., Ltd; discussion;
R2-153427 How to apply the extended DRX in the connected mode; Samsung Telecommunications; discussion;
R2-153576 the issues on the C-eDRX; Beijing Xinwei Telecom Techn.; discussion;
R2-153836 Extended DRX in connected mode; QUALCOMM CDMA Technologies; discussion;

7.11 SI: Study on Latency reduction techniques for LTE

(FS_LTE_LATRED; leading WG: RAN2; started: Mar. 15; target: June 16; WID: RP-150465)

Time budget: 1 TU

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TR

TR 36.881 v0.2.0 is agreed in R2-152936 (result of email discussion [90#11])

✉ **[91#17][LTE/Latency] Two weeks: Update of TR 36.881 (Ericsson)**
-Capture agreements from this meeting
=> Intended outcome: Agreed update of TR 36.881 v0.2.1 in R2-153910

Discussion

R2-153489 Areas for latency reduction; Ericsson; discussion;
- ZTE thinks that the padding could be avoided irrespective of the fast uplink access. Ericsson agrees but thinks that it is necessary for the described fast uplink scheme.
- LG thinks that the UE might not benefit from TTI shortening at high system load. LG thinks that with many UEs in the system, a long SR period may have to be configured. Ericsson has also scaled the PUCCH cycle. Nokia Networks agrees with LG that for higher system load the gain will be smaller also e.g. due to higher scheduling delay. MediaTek thinks that it is quite natural that at high system load this is not applicable since the queuing delay becomes dominating.
- Huawei thinks that one should also evaluate this for the cell edge
- Huawei wonders what L1/2 overhead Ericsson assumed. Ericsson has assumed reduced payload resources for UL by 50%. Huawei wonders about the overhead assumption for DL. Ericsson did not model DL overhead since they assumed that when a UE is scheduled for multiple short TTIs within a subframe no additional DMRS would be needed. Intel thinks that some overhead should have been assumed for the DL. The UL overhead that was modelled shows no effect since the UL only carries TCP ACKs.
- ALU thinks that the benefit of going below 0.5 ms TTI is not that significant and expect it to be smaller when some DL overhead was considered.
- Samsung supports the intention to capture the TP in the TR. MediaTek also supports the intention to capture this in the TR. MediaTek agrees that some other aspects should be taken into account.
- ETRI thinks that simulation results will look worse if mobility and varying link conditions had been assumed since the SPS allocation would not be usable for a longer time (link adaptation). Ericsson points out that, as shown by other contributions, the shorter TTI also allows faster link adaptation which has not been assumed in this paper.

=> Noted

R2-153292 Evaluation of TTI reduction gain with additional L1/L2 overhead; Intel Corporation; discussion;
- Huawei thinks that 0.1 ms TTI does not match any integer number of symbols. Intel agrees but thinks that the results anyway show the gains that can be achieved.

=> Noted

R2-153497 Analysis on latency reduction with TTI shortening; CATT, China Telecom; discussion;
- Intel is surprised that the gains in table 4 are so small. This seems different from other evaluations.
- Huawei thinks that if the configured maximum TCP window size is smaller than the packet-delay-product, the lower latency will ensure increased e2e data rate even for large files. Chairman is not sure whether we should base our assumptions on that scenario where the TCP window is the bottleneck.

- Ericsson suggests that we don't look at all evaluation papers online but rather discuss those via email. Companies may provide TPs with their results to the email discussion so that they can be included in one big TP by the rapporteur. That TP will then be provided as input to the next meeting and hopefully be agreeable. Possibly, a conclusion for those results should be added.

=> Noted

✉ **[91#29][LTE/Latency] Evaluation results (Ericsson)**
-All companies may provide comprehensive TPs with their assumptions, results and conclusions to the email discussion. Those parts can then be included in one big TP by the rapporteur. That TP will then be provided as input to the next meeting. Possibly, a conclusion for those results should be added
=> Intended outcome: TP with simulation assumptions, results and conclusions

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R2-153332 Skipping uplink transmission with no data to transmit (discussion); Samsung Electronics Co., Ltd; discussion;

- Nokia Networks thinks that this is generally a good idea but the UE will have to send a BSR from time to time so that the eNB can detect lost PDCCH. Ericsson also supports the general idea. Ericsson considers that this is particularly useful for the SPS configured grant. Ericsson wonders whether it would really be efficient for dynamic grants. Furthermore, there would be the problem outlined by Nokia Networks. Samsung thinks that this could be addressed in addition to proposal 1 and 2. Panasonic would like to restrict this scheme to SPS configured grants in order to avoid these problems. Samsung is not against this but would actually like to apply it also to dynamic pre-scheduling. Nokia Networks would also like to be able to apply it to dynamic pre-scheduling. LG would also like to support this for dynamic scheduling. Ericsson thinks we should enhance SPS to enable the pre-scheduling. The benefit is savings of PDCCH resources. Huawei also sees a risk with the PDCCH losses and therefore sees benefits from SPS.

=> Noted

R2-153490 L2 enhancements to reduce latency; Ericsson; discussion;

- Ericsson clarifies that only one UE had been assumed in the evaluation but in principle the eNB could assign the same UL resources to multiple UEs. Ericsson explains that the eNB would give individual grants but for the same UL resource. UEs would reply to the first grant and afterwards use the resource when they have data. Huawei thinks that if two UEs transmit at the same time, there will be a collision. Ericsson has not focused on contention based transmission in this contribution.
- ETRI thinks that this proposal is like random access. Ericsson has not focused on the case where multiple UEs get the same resource allocated. Ericsson assumes that as the load increases, the eNB would fall back to normal request based UL scheduling. Samsung agrees that we should focus on the dedicated SPS allocation (no contention) and supports this as a solution direction.
- Samsung proposes to agree on the principle of omitting empty UL PDUs. We could then independently for SPS and dynamic scheduling discuss suitable means to address PDCCH loss.
- Nokia Networks thinks that we should focus on the case without double allocation of resources to multiple UEs, i.e., not to investigate contention based access. QC thinks that an eNB implementation could allocate the same resource to multiple UEs. LG agrees with Nokia Networks that we should not focus on the contention based. Ericsson confirms that here the focus was on what Nokia Networks and LG expressed. Ericsson also agrees that the NW could over-allocate but agrees that we should not optimize for that here in RAN2. Apple thinks we could investigate also contention based schemes. Samsung does not suggest excluding anything now but thinks we could focus on dedicated allocation. TCL thinks that multiple UEs could share the same resources if we support contention based schemes. Huawei agrees provided that there is not much RAN1 impact.
- Samsung thinks that the SPS scheme would also solve the PDCCH load aspect.
- LG thinks that the UE does not need to send any feedback to the received grant activating SPS. Huawei tends to agree that the UE would use the SR resource if it did not receive the SPS grant. Ericsson thinks that it would result in unused resources. If the NW has configured a rare D-SR resource, this will also result in some wait time. AsusTek agrees that it is good to send a feedback but it could be an ACK. AsusTek thinks this would be similar to the DL SPS release.

Agreements

1 It is beneficial to allow UEs to skip (most) dynamic and configured uplink transmissions if no data is available for transmission (the UE still sends the regular MAC CE, if any). The eNB may enable this by RRC dedicated signalling.

2 A shorter SPS interval (1 TTI) should be supported

=> Noted

R2-153185 Latency Reduction during Handover; Nokia Networks; discussion;

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- QC agrees that the handover should be looked at. QC wonders though how this scheme could be better than CF handover. Nokia Networks thinks that by omitting the RA the latency would be reduced. QC thinks that power control is needed anyway.
- ALU thinks that even after sending the HO command, the eNB may still send data to the UE while forwarding those same packets. The target eNB could then filter out those that the UE still received from the source cell before disconnecting. QC thinks that the UE has to reset L2 once it receives the HO command. ALU thinks that the UE could possibly still receive L2 data while the UE processes the RRC Command. A possible enhancement could be to use the time from resetting L2 until the RA occasion in the target. QC agrees that one could look at that. Samsung thinks that the L1 re-tuning to the target cell often takes in the order of 50 ms.
- Motorola wonders how the UE would get UL TA. Nokia Network agrees that this would need to be studied. It could be possible at least in small cells.
- Ericsson wonders in which of the HO steps Nokia Networks has identified the biggest latency.
- Chairman wonders whether a UE could receive still from the source cell while establishing time sync with the target cell. Samsung and Nokia Networks think that it is possible.
- ZTE thinks that if we want to skip the RA, the target eNB would have to pre-allocate PUSCH resources from the point in time where it expects the UE to arrive in the target cell.
- Ericsson would like to understand more where the delay comes from to be sure that we enhance the right aspect.

=> Can further evaluate latency caused by handover (which steps cost most time?) and investigate possible enhancements.

=> Noted

R2-153374 Uplink latency reduction for synchronized UEs; Huawei, HiSilicon; discussion;
R2-153161 Potentail area for latency reduction; LG Electronics Inc.; discussion;
R2-153222 Potential protocol enhancement for Fast Uplink Access; Nokia Networks; discussion;
R2-153223 Simulation result for fast uplink access and TTI shortening; Nokia Networks; discussion;
R2-153293 Effect of UE and eNB processing times on TCP performance; Intel Corporation; discussion; [Withdrawn]

R2-153810 Effect of UE and eNB processing times on TCP performance; Intel Corporation; discussion;
R2-153294 Protocol impact of fast uplink access solution for latency reduction; Intel Corporation; discussion;
R2-153331 Discussion on Contention Based Access; Samsung Electronics Co., Ltd; discussion;
R2-153333 Skipping uplink transmission with no data to transmit (321 CR); Samsung Electronics Co., Ltd; draftCR; 36.321; 12.6.0;
R2-153334 Skipping uplink transmission with no data to transmit (331 CR); Samsung Electronics Co., Ltd; draftCR; 36.331; 12.6.0;
R2-153373 Downlink latency reduction for unsynchronized UEs; Huawei, HiSilicon; discussion;
R2-153375 Problems of the current LTE system on latency; Huawei, HiSilicon; discussion;
R2-153376 Evaluation on the gains provided by one symbol length TTI; Huawei, HiSilicon; discussion;
R2-153851 Evaluation on the gains provided by one symbol length TTI; Huawei, HiSilicon; discussion; revision of R2-153776
R2-153405 Initial consideration of fast uplink access solution; Kyocera; discussion;
R2-153416 Combined SR with BSR for reducing UP latency; III; discussion;
R2-153493 Study of shorter TTI for latency reduction; Ericsson; discussion;
R2-153499 Analysis on VoLTE capacity with TTI shortening; CATT; discussion;
R2-153500 Analysis on uplink access solutions; CATT; discussion;
R2-153514 Specificaiton impacts of short TTI; ZTE Corporation; discussion;
R2-153548 Consideration on Random Access for Heterogeneous TTIs in a Carrier; ETRI; discussion;
R2-153578 Performance evaluation on short TTI; ZTE Corporation; discussion;
R2-153852 Performance evaluation on short TTI; ZTE Corporation; discussion; revision of R2-153578
R2-153701 Discussion on reduction of handover interruption; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153702 Discussion on solutions for latency reduction; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; discussion;
R2-153823 Considerations on latency reduction solutions based on pre-grant procedure for LTE; KDDI Corporation; discussion;
R2-153837 System performance with shorter TTI; QUALCOMM CDMA Technologies; discussion;

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Above 26 Tdocs not treated

7.12 Other LTE Rel-13 WIs

RAN Sharing Enhancements

(RSE-RAN_LTE-Core; leading WG RAN3; started: Sep 14; target: Sep 15; WID: RP-141671)

Incoming LSs

R2-153017 LS on overload of MME resource quotas in RAN sharing scenarios (R3-151317; contact: Alcatel Lucent); RAN3; LS in; Rel-13; RSE-RAN_LTE-Core;
[Moved from 3.2 to 7.12]

=> Noted

R2-153029 Reply LS to R3-151317 = R2-153017 on overload of MME resource quotas in RAN sharing scenarios (S2-152692; contact: Alcatel Lucent); SA2; LS in; Rel-13; RSE-RAN_LTE-Core;
[Moved from 3.2 to 7.12]

=> Noted

R2-153016 LS on RAN Sharing Enhancements for LTE (R3-151316; contact: Nokia Networks); RAN3; LS in; Rel-13; RSE-RAN_LTE-Core;
[Moved from 3.2 to 7.12]

- Telecom Italia wonders whether the restriction of 200 is per UE or per cell or per operator. Nokia Networks believes that it will be per eNB.

=> Noted

Discussion

R2-153664 RAN Sharing enhancements resource usage reporting; NEC; discussion; Related to incoming LS R2-153016; Rel-13; RSE-RAN_LTE;

- Nokia Network points out that the 200 counters are per eNB and not per UE as one might think from this paper. NEC agrees that there are at most 200 counters per eNB but many UEs may contribute to each of those counters. The details of the mapping/filtering are still being discussed in RAN3.
- Nokia Networks thinks that RAN3 agreed a stage-2 CR which mentions measurements that are in-line with our L2 measurements. The filtering (e.g. based on dimension of PLMN) does not need to be captured in 36.314. Chairman thinks that we should replace the measurement definition in 36.300 proposed by RAN3 by a reference to 36.314 instead. MediaTek agrees and think that any possible additions to the measurement definitions should also be captured in 36.314. TI also agrees but would like to ensure that the intended filtering by PLMN and others are supported.
- Ericsson thinks that the L2 measurements in 36.314 are per QCI. RAN3 wants to filter them further per PLMN, ARP. MediaTek thinks that RAN3 and SA5 are aware of that specification and could provide CRs for that.

=> Noted

=> Reply to RAN3 and SA5 that they may consider using the measurements already defined in 36.314 and propose extensions, if necessary, for enabling the desired filtering (e.g. PLMN, GBR value range…). New measurements should not be defined in 36.300.

=> CB: [LTE/Network Sharing] A draft reply LS on RAN Sharing Enhancements for LTE to RAN3 may be provided in R2-153868 (Nokia Networks)

R2-153868 Draft Reply LS on RAN Sharing Enhancements for LTE (contact: Nokia Networks); RAN3, SA5; LS out; Rel-13; RSE-RAN_LTE-Core;

=> Change LS to “RAN2 would like to thank RAN3 for the LS in R3-151316 regarding Rel-13 WI on RAN Aspects of RAN Sharing Enhancements for LTE.
RAN2 has discussed Data Volume Report measurements and noticed that measurements proposed by RAN3 are available in TS 36.314. New measurement definitions should not be defined in TS 36.300 as currently done in the endorsed RAN3 CR. The RAN3 CR should rather refer to TS 36.314.
With reference to enabling the desired filtering required for the Data Volume Reporting (e.g. PLMN, GBR value range…) RAN3 and SA5 decisions are required. Any proposed

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extensions, if necessary, can be introduced in TS 36.314 upon RAN3/SA5 indication and agreement in RAN2."

✓ => With this change the Draft Reply LS on RAN Sharing Enhancements for LTE to RAN3 is approved in R2-153911

R2-153630 Data Volume measurement for RAN Sharing; Nokia Networks; discussion; Rel-13; RSE-RAN_LTE;

R2-153631 Draft Reply LS on RAN Sharing Enhancements for LTE; Nokia Networks; discussion; Rel-13; RSE-RAN_LTE;
Above 2 Tdocs not treated

7.13 LTE TEI13 enhancements

Small Technical Enhancements affecting LTE Rel-13 that do not belong to any Rel-13 WI.

Note: A TEI enhancement proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

36.302

R2-153350 TS36.302 rapporteur's cleanup; Alcatel-Lucent; CR; 36.302; 12.4.0; 0061; D; Rel-12; TEI12;
=> Changes to Cat. F
=> Remove changes on changes in 6.1.2
- Ericsson points out that the Mode 1 assignment for Sidelink carried on the PDCCH uses SL-RNTI. This should probably be mentioned in table Table 8.2-1. ALU thinks that this could be in a separate CR.
=> With these changes the CR is agreed in R2-153869 CR0061 R1

Paging Enhancements

R2-153464 Paging optimization; Huawei, HiSilicon; discussion; Rel-12; TEI12;
[Moved from 6.2.9 to 7.13]

- Proposals 1 to 4 are agreed but we introduce this from Rel-13 as suggested by RAN3 and SA2.
=> Noted

R2-153466 Paging optimization; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1873; F; Rel-12; TEI12;
[Moved from 6.2.9 to 7.13]

=> Add field descriptions explaining e.g. that the eNB has to generate an empty UE-RadioPagingInfo-r12 if the UE does not provide it.
=> Change the field name "supportedBandListEUTRA" to avoid confusion with the field provided directly by the UE.
=> Update to "13" in field names
=> Update cover page
=> CB: [LTE/Paging] An updated CR may be provided in R2-153870 (Huawei)
=> Intention is to technically endorse this CR and to provide it to other groups as reference.

R2-153870 Paging optimization; Huawei, HiSilicon; CR; 36.331; 12.6.0; 1873 R1; B; Rel-13; TEI13;
=> Change to "The eNB generates the ue-RadioPagingInfo and the contained UE-Category-v1250 is absent when the UE is not a category 0 UE"
=> Change to "Indicates the UE supported frequency bands which is derived by the eNB from UE-EUTRA-Capability."
=> With these changes the CR is technically endorsed in R2-153912 CR1873 R2

R2-153474 Draft Response LS on Paging optimization; Huawei; LS out; reply LS to R2-153015; Rel-12; TEI12, LC_MTC_LTE-Core, LTE_MTCe2_L1-Core;
[Moved from 6.2.9 to 7.13]

=> Remove the text related to MTC and the WI code
=> Update to Rel-13/TEI13
=> Change to "extend the existing container"
=> CB: [LTE/Paging] An updated draft LS may be provided in R2-153871 (Huawei)

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R2-153871 Draft Response LS on Paging optimization; Huawei; LS out; reply LS to R2-153015; Rel-13; TEI13;
=> Clarify that the attached CR is only technically endorsed and will not be submitted to RAN plenary in September
=> Update the reference
✓ => With these changes the Draft Response LS on Paging optimization to RAN3 and SA2 is revised in R2-153913 then approved in R2-153973

Access Control

R2-153301 Restricting Unattended/Background Data Traffic; Verizon, Acatel-Lucent, Ericsson, Qualcomm; discussion; Rel-13; TEI13;
- DT thinks that this addresses an important issue but DT wonders how we can standardize this properly. How can we in 3GPP ensure that the right traffic is barred in the operating system? Verizon intends to specify only the AS signalling whereas the handling on higher layers is left to the Operating System. Vodafone thinks that all kind of machine traffic would fall into this category and one may wonder if this is intended. Verizon assumes that an MTC OS would not classify any background traffic. Sony agrees that it would still be up to the operating system. Nokia Networks shares this concern also regarding testability. Sony agrees that it will not be testable.
- Sony is concerned about the device performance. Sony thinks that save a lot of battery by proprietary means and Sony is concerned that this would become bad with such a feature. BlackBerry shares those concerns.
- Intel thinks that the requirements has been added in the context of UPCON and assumes that it was supposed to be handled by NAS functionality which is currently however not done due to the absence of a corresponding WI.
- Regarding observation 3, BlackBerry thinks that a way to reduce the RRC signalling overhead is to keep the UE longer in CONNECTED.
- KDDI supports Verizon's proposal.
- Nokia Networks thinks that operating systems already allow the user to disable background traffic. It is up to the user to make use of that functionality or not. Verizon agrees but thinks that most users don't enable this today.
- Nokia Networks thinks that the load will appear anyway once the user enables the screen again. Verizon thinks that those are typically keep alive messages and requests that will not be sent all later.
- Nokia Networks wonders whether push email while the screen is disabled is considered unattended traffic. Verizon explains that this is supposed to be used by the network during high load phases. And then it is better to block unattended background traffic rather than actively used phones. Huawei agrees with Nokia Network's concern and thinks that a so called background service with its notifications might be very essential for the user.
- MediaTek wonders whether this is similar to ACDC. Verizon explains that the difference is that this does not generally block certain applications but rather all applications while they are in background mode. Verizon points out that net neutrality may not allow blocking only individual applications by ACDC.
- LG thinks that such a solution should be discussed in CT1. Ericsson thinks that RAN2 can address the problem since it is a problem with radio load. CT1 could afterwards discuss the feasibility with respect to interaction between NAS and higher layers. Telecom Italia points out that ACDC came from CT1 and SA1 and not the other way around. ALU thinks that the intention is to provide the indication from AS more or less directly to the OS. Therefore, there should be hardly any CT1 impact.
- Nokia Networks thinks that this might rather be a candidate for a WI considering it will likely involve multiple WGs.

=> Noted

RRM Measurements

R2-153687 Cell lists for Ax events; Ericsson; discussion; Rel-13; TEI13;
- MediaTek agrees that this is a problem and supports proposal 1.
- MediaTek does not thinks that A4 events should be prohibited since that shows inter-eNB cells needed for mobility. Ericsson agrees that for A4 it would be better to configure this on an event level rather than on carrier level.
- Samsung wonders why it is not important to know that there is an intra-frequency cell from another eNB. Shouldn't that stop the eNB from using the current SCell for CA. QC

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wonders about the same but thinks that as long as the SCell has no UL, there is no interference problem. Chairman assumes that at least for DL SCell deactivation the eNB could use the CQI. Huawei thinks it will generally be beneficial to know also intra-frequency neighbours from RRM measurements.
- QC supports the proposal as it helps to avoid sending useless measurement reports.
- Nokia Networks wonders why we would not apply it to other events such as A3. Ericsson observed the problems primarily with A6 and considered A4 to be similar to that. QC thinks that measurements related to the PCell (e.g. A3, A1, A2, …) are usually needed at the eNB. But QC would be fine to introduce it also for other events. Nokia Networks agrees.
- Samsung thinks we should avoid frequency specific information in

Agreements

1 Introduce the possibility to apply black/white lists only to selected ReportConfigEUTRA. (Details FFS)

=> Noted

R2-153707 White-list for A4 and A6 event triggering; Ericsson; CR; 36.331; 12.6.0; 1899; C; Rel-13; TEI13;

R2-153710 White-list and black-list for Ax event triggering; Ericsson; CR; 36.331; 12.6.0; 1901; C; Rel-13; TEI13;

Above 2 Tdocs not treated

R2-153189 Location specific UE measurement configurations; Nokia Networks; discussion; Rel-13; TEI13;
- MediaTek thinks that this sounds sophisticated and complex. Tuning on the NW side might be more appropriate. MediaTek also thinks that if the base station wanted to do this, it could do it today by using some positioning information and to re-configure the measurement parameters when the UE moves into an area that requires these specific parameters. This would not require any changes in RAN2 protocols.
- Ericsson wonders whether the assumption is that the eNB knows the positions where specific measurement configurations are needed. Nokia Networks assumes that the NW obtains RLFs from specific locations that indicate need for contradicting configurations.
- Samsung thinks that we have discussed other enhancements that would also allow tuning the measurement parameters without requiring accurate location information.
- MediaTek thinks that triggering a bit too early is usually not as much a problem as too late handovers. The former result typically in a bit more ping pong but could be acceptable.

=> No support for the proposed enhancement.
=> Noted

MRO

R2-153188 Enhancement of the UE timer used by MRO for Failure Analysis; Nokia Networks; discussion; Rel-13; TEI13;
- MediaTek wonders which of the RLFs is supposed to be classified. Nokia Networks explains that it is the second one. MediaTek thinks that this is one in a cell that UE has selected. But we cannot do MRO for cell selection. QC agrees with MediaTek and wonders what Nokia Networks actually wants to optimize. Nokia Networks thinks that without addition there is a risk that outdated RLF reports can be reported. Huawei agrees with QC that this is not needed.

=> No support
=> Noted

ProSe

R2-153559 Discussion on acknowledgement for Sidelink grant; ASUSTEK COMPUTER (SHANGHAI); discussion; Rel-13; TEI13; revised in R2-153563

[Withdrawn]

R2-153563 Discussion on acknowledgement for Sidelink grant; ASUSTEK COMPUTER (SHANGHAI); discussion; Rel-13; TEI13;
- Ericsson points out that this was discussed in Rel-12 and not agreed. What has changed since then? ASUSTEK thinks that we did not discuss it due to lack of time. Ericsson does not consider this enhancement necessary. ASUSTEK thinks that PDCCH is lost with a

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probability of 1% and the effect is significant since the sidelink grant is applicable for many subframes.
- ASUSTEK thinks that if the feedback comes too late to re-send the sidelink grant, it could still allocate some of the resources allocation.
- LG thinks that the paper was treated in RAN2-88 and noted due to lack of support.
- eNB thinks that there is also the risk that the eNB does not receive the feedback correctly, there is a risk that the eNB allocates the same resource to two UEs. ASUSTEK thinks that the combined probability is low.

=> No support
=> Noted

R2-153566 Discussion on Random Access for Sidelink; ASUSTEK COMPUTER (SHANGHAI); discussion; Rel-13; TEI13;
- Ericsson thinks that this was discussed in RAN2-88 and agreed on another solution for random access. ASUSTEK thinks that at that time we had no time to discuss optimizations in detail. LG tends to agree with the intention of the proposal but thinks that one should rather remove C-RNTI contention resolution. CATT thinks that both are needed.
- ASUSTEK explains that upon loss of time alignment the UE requests sidelink resources by a CB RA. Chairman thinks that this is rare case. Typically, SL-BSR transmission will rely on D-SR. Ericsson thinks that this optimization is not needed.

=> Can be discussed next meeting
=> Noted

EVS Support

R2-153131 Discussion on the need of eNB awareness for EVS; Qualcomm Incorporated; discussion; Related to SA4 LS in R2-153036; Rel-13; TEI13;

[Withdrawn]

8 UTRA Release 10 and earlier releases

R2-153305 Clarification for the physical channel combination of DC-HSUPA and MC-HSDPA Nokia Networks discussion
- ALU likes the suggested text for table 2-3 and thinks that for Rel-10 one possibility could be to introduce a third column that lists all other secondary carriers.

=> Bring a CR next meeting to fix the issue

=> Noted

9 UTRA Release 11

(Cell_FACH_enh-Core, leading WG: RAN2, REL-11, started: March 11, closed: Dec. 12, WID: RP-111321)

(HSDPA_MFTX-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111375)

(4Tx_HSDPA-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111393)

(MIMO_64QAM_HSUPA-Core, leading WG: RAN1, REL-11, started: Dec. 11, closed: Dec. 12, WID: RP-121794)

(rSRVCC-RAN_UTRA-Core, leading WG: RAN3, REL-11, started: Sep.11, closed: Dec.12, WID: *RP-111334*)

(HSPA_UL_TxDiv-CL-Core, leading WG: RAN1, REL-11, started: Dec.10, target: Dec.12, WID: RP-120367)

(HSPA_UL_TxDiv-OL-Core, leading WG: RAN4, REL-11, started: Dec.10, closed: Dec. 12, WID: RP-120367)

(8C_HSDPA-Core, leading WG: RAN1, REL-11, started: Dec.10, closed: Sep. 12, WID: RP-101419)

Including corrections for UTRA functionality introduced as TEI11.

No contributions received

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10 UTRA Release 12

10.1 WI: Further EUL Enhancements

(EDCH_enh-Core, leading WG: RAN2, REL-12, started: Dec. 13, **closed**: Dec. 14, WID: RP-140127)

No contributions received

10.2 WI: Enhancements to SIB

(UTRA_SIBenh-Core, leading WG: RAN2, started: Dec. 13, **closed**: Sep 14, WID: RP-140131)

No contributions received

10.3 WI: UMTS Heterogeneous Networks enhancements

(UTRA_hetnet_enh-Core, leading WG: RAN1, started: Dec.13, **closed**: Sep. 14, RP-140463)

No contributions received

10.4 WI: DCH Enhancements for UMTS

(UTRA_DCHenh-Core, leading WG: RAN1, started: Sept.13, **closed**: Sep. 14, RP-131357)

No contributions received

10.5 WI: WLAN/3GPP Radio Interworking – UTRA aspects

(UTRA_LTE_WLAN_interw-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Sep. 14, WID: RP-132101)

No contributions received

10.6 WI: Increasing the minimum number of carriers for UE monitoring in UTRA and E-UTRA

(LTE_UTRA_IncMon-Core, leading: RAN4, REL-12, started: Dec.13, **closed**: Dec. 14, WID: RP-132061)

R2-153306 Clarification for the inter-frequency measurement results on RACH with extended cell ID values Nokia Networks, Huawei, HiSilicon CR 25.331 12.6.05780 F Rel-12 LTE_UTRA_IncMon-Core
moved from 10.7 to 10.6
- Ericsson thinks that we should use the correct capability and we can remove the reference to stage 2.

=> the CR is moved to email discussion

Email discussion

✉ **[91#00][UMTS/IncMon] – Agree to 25.331 CR**
- Agree to 25.331 CR (R2-153905)
- One week after the meeting

R2-153532 Increased UE carrier monitoring E-UTRA support mandatory Ericsson CR 25.306 12.5.00488 F Rel-12 LTE_UTRA_IncMon-Core
moved from 4.2 to 10.6
- Ericsson this that we should make the capability dependent on E-UTRA capability " in this release of the specification if the UE supports E-UTRA and if it is not category 0 UE it shall support …"

=> The CR is revised in R2-153898

R2-153898 Increased UE carrier monitoring E-UTRA support mandatory Ericsson CR 25.306 12.5.00488 1 F Rel-12 LTE_UTRA_IncMon-Core

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=> The CR is agreed

10.7 Other UMTS Rel-12 WI/SIs

Input to any other Rel-12 WI/SI not explicitly listed above.

(UTRA_hetnet_mob-Core, leading WG: RAN2, Started: Dec.13, closed: June 14, WID: RP-140463)

(LCS_BDS-UTRA-Core, leading WG: RAN2, started: March 13, closed: Dec.13, WID: RP-130416)

(EHNB_enh3-Core, leading WG: RAN3, REL-12, started: Sep.12, closed: Dec 13, WID: RP-130741)

(LCR_TDD_HSPA_sign_enh-Core, leading WG: RAN1, started: Dec 12, closed: Dec 13, WID: RP-121984)

(LTE_UTRA_SDL_BandL-Core, leading WG: RAN4, started: June 13, target: June 14, WID: RP-140092)

Including corrections for UTRA functionality introduced as TEI12.

R2-153077 Simultaneous reconfiguration and active set update procedures Nokia Networks discussion
=> Noted

R2-153591 Rapporteur corrections for 25.331 RRC specification Ericsson CR 25.331 12.6.05785 D Rel-12 TEI12
=> The CR is agreed

11 UTRA Release 13

11.1 WI: L2/L3 Downlink enhancements for UMTS

(UTRA_EDL_L23-Core, leading WG: RAN2, started: June 15, target: Dec. 15, WID: RP-151043)

Time budget: 4 Tus

R2-153190 Work Plan for the WI of L2 and L3 Downlink enhancements Huawei (Rapporteur) discussion
- Ericsson wonders how much can RAN3 progress in this meeting. Huawei thinks that at least RAN3 can progress on objective 4 part of the WI.

=> Noted

R2-153203 Introduction of L2 and L3 Downlink enhancements in TS 25.300 Huawei, HiSilicon CR 25.300 12.4.00018 B Rel-13 UTRA_EDL_L23-Core
=> Not treated

11.1.1 Retrievable configurations

Contributions should focus on the solutions discussed and concluded in the SI phase

R2-153194 Discussion on the solution on configuring retrievable configurations Huawei, HiSilicon discussion
- Ericsson thinks that we should use the same IEs for retrievable configuration. If we add new IEs in the same message we are increasing the message size and increasing the potential impacts to the spec. Huawei wonders how the network can configure multiple configurations.
- Ericsson wonders why a retrievable configuration needs to be deleted. Huawei would like to have the possibility to disable the feature. Qualcomm thinks that one use case could be to replace a configuration. Ericsson thinks that it can be done by overriding the configuration.
- Ericsson thinks that proposal 3 and 4 are fine but wants to ensure that we can change part of the configuration only.

=> Noted

R2-153302 Retrievable configurations Nokia Networks discussion

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- Huawei wonders what is meant by Proposal 3. Nokia Net indicates that the proposal is addressing how many configurations we can send in one message.

=> Noted

R2-153583 Retrievable configurations Ericsson discussion

=> Noted

R2-153193 Discussion on the parameters in the retrievable configurations Huawei, HiSilicon discussion

=> Not treated

R2-153584 Retrievable configurations Ericsson CR 25.300 12.4.00021 B Rel-13 UTRA_EDL_L23

=> Not treated

NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet

R2-153585 Retrievable configurations Ericsson CR 25.331 12.6.05784 B Rel-13 UTRA_EDL_L23

=> Not treated

NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet

Discussion

How to configure/signal a retrievable configuration (only one retrievable configuration in a RRC message or multiple retrievable and introduction on new IEs)

- Nokia Net prefers to have multiple configurations per message and doesn't think that it will introduce too much complexity. For example eSCC, we didn't introduce spec changes for every IE we included. We only specified that we act on the container only when we do the cell change.
- Ericsson doesn't think that we should increase the message size and maybe we can have a new message introduced.
- Huawei thinks that if you want to signal more than one you have to send more than one RRC message.
- Qualcomm would also like to have the flexibility to send more than one.

Should "Downlink HS-PDSCH Information" be included in retrievable configurations

- Nokia Net wonders why we shouldn't include the Downlink HS-PDSCH Information. Ericsson thinks that the retrievable configurations shouldn't be very dynamic parameters. Qualcomm thinks that it can be left up to the network to include or not.

The network should have a possibility to provide configurations for a particular state regardless of the state in which a UE is

- Qualcomm wonders that the configurations are common for all states that we are limiting the amount of configurations we can provide. Nokia Net thinks that this is a trade off.

Working assumption: - Multiple retrievable configurations are allowed to be signalled using a single message - "Downlink HS-PDSCH Information" may be included in retrievable configurations Agreements - The UE can store up to 16 retrievable configurations - Retrievable configurations can only be signalled to the UE in CELL_FACH or CELL_DCH - Retrievable configurations can be stored in all states except idle mode. FFS if is used in CELL_PCH and URA_PCH

11.1.2 Seamless URA_PCH to CELL_FACH transitions

Seamless URA_PCH to CELL_FACH transitions (with or without RNTI extension)

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R2-153195 Discussion on seamless transition from URA_PCH to CELL_FACH Huawei, HiSilicon discussion
Proposal 1: It is proposed RAN2 to agree the URA-wide RNTI solution for seamless transition from URA_PCH to CELL_FACH.
- Ericsson agrees

Proposal 2: It is proposed RAN2 to agree a seamless URA_PCH state transition requires a UE to be configured with C-RNTI, dedicated H-RNTI and E-RNTI.
- Ericsson thinks C-RNTI is not needed. Huawei thinks that we should align the procedure as much as possible with the existing common E-DCH variables and there the C-RNTI is needed. Qualcomm thinks that the problem now is that if we remove C-RNTI now then it will be too complicated to clean up the spec and changing it in one place may trigger a chain reaction.

=> Noted

R2-153303 Seamless transition from URA_PCH Nokia Networks discussion
- Huawei thinks that we should check further in which cases we need to send CELL_UPDATE.

=> Noted

R2-153197 Introduction of seamless transition from URA_PCH to CELL_FACH Huawei, HiSilicon CR 25.301 12.0.00110 B Rel-13 UTRA_EDL_L23-Core
=> Not treated

R2-153198 Introduction of seamless transition from URA_PCH to CELL_FACH Huawei, HiSilicon CR 25.308 13.0.00168 B Rel-13 UTRA_EDL_L23-Core
- Nokia Net thinks that the changes in this section are modifying a different feature. Huawei thinks that they were aligning the behaviour with CELL_PCH in terms of how paging is done. Qualcomm is wondering whether the HSPA paging and PCH seamless transition were different features. Nokia confirms that it is a different feature and we should discuss whether we want to enable it or not.

=> The CR is postponed

R2-153199 Introduction of seamless transition from URA_PCH to CELL_FACH Huawei, HiSilicon CR 25.319 12.3.00134 B Rel-13 UTRA_EDL_L23-Core
=> The CR is postponed

R2-153201 Introduction of seamless transition from URA_PCH to CELL_FACH Huawei, HiSilicon CR 25.331 12.6.05778 B Rel-13 UTRA_EDL_L23-Core
- Ericsson thinks that we should maybe use a new variable. Huawei thought that a new variable was a bit more complicated.
- Qualcomm indicates that the variable HSPA_RNTI_STORED_CELL_PCH variable was introduced for the case where the network or the UE does not support HSPDA based paging and the variable ready for common E-DCH is for the case where both network and UE both support HSDPA based paging.

=> The CR is postponed

Not treated

R2-153558 Introduction of Seamless URA_PCH to CELL_FACH transition Ericsson CR 25.308 13.0.00170 B Rel-13 UTRA_EDL_L23-Core

R2-153560 Introduction of Seamless URA_PCH to CELL_FACH transition Ericsson CR 25.319 12.3.00135 B Rel-13 UTRA_EDL_L23-Core

R2-153565 Introduction of Seamless URA_PCH to CELL_FACH transition Ericsson CR 25.331 12.6.05782 B Rel-13 UTRA_EDL_L23-Core

withdrawn

R2-153200 Introduction of seamless transition from URA_PCH to CELL_FACH Huawei, HiSilicon CR 25.321 12.2.00811 B Rel-13 UTRA_EDL_L23-Core

Agreements:
- To support seamless URA_PCH state transition a UE needs to be configured with C-RNTI, dedicated H-RNTI and E-RNTI. FFS on the need of C-RNTI and impact on legacy procedures if C-RNTI is not included.
- FSS whether HSDPA based paging is allowed for seamless URA_PCH transitions (e.g. paging on HS-SCCH)

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11.1.3 RNTI extension mechanisms

RAN2 specific aspects related to extending RNTI? What states is this extension applicable to?

R2-153202 Discussion on the extended RNTI solution Huawei, HiSilicon discussion
=> Noted

R2-153304 Overview of solutions for extending the RNTI space Nokia Networks discussion
- Ericsson thinks that for the solution two we would to signal the UE the channels it has to monitor.
- Ericsson thinks that this would require using up a lot of HS-SCCH and you impact capacity. Nokia Net thinks that nothing comes for free.

=> Noted

R2-153531 RNTI extension Ericsson discussion
=> Noted

Discussion:
- Nokia Net is in favour of the solution in which parallel channels are configured.
- Huawei would prefer that for E-RNTI extension we introduce parallel E-AGCH channels and for H-RNTI extension we should consider MAC PDU extension. Ericsson thinks that the MAC PDU solution has impact on battery consumption.
- Ericsson favours changing the E-AGCH and HS-SCCH channels to extend the E-RNTI/H-RNTI.
- Chair wonders what about C-RNTI. Nokia Net thinks that we can use the U-RNTI in the MAC PDU.
- Ericsson thinks that maybe we can send an LS to RAN1 to get their opinion. Nokia Net thinks that here in RAN2 we can already understand the RAN1 impacts.
- Chair wonders how a legacy UE knows that the HS-SCCH is using a new format. Nokia Net thinks that to be able to distinguish the HS-SCCH format you may need a different HS-SCCH channel.

11.1.4 Improved HARQ retransmission

R2-153204 Discussion on improved HARQ retransmission Huawei, HiSilicon discussion
- Qualcomm is not convinced about the benefits of this feature. Huawei wonders what the detailed concerns are.
- Nokia Net wonders why HARQ A/N repetitions wouldn't be allowed. Huawei indicates this is because the UE may be scheduled in consecutive TTIs and this means that A/N repetitions can't be done. Nokia Net wonders how A/N will work, is it once after all the repetitions are done or will it be generated after every transmissions. Huawei thinks that independent A/N feedback will be done, one for each transmission. Nokia Net thinks that we can potentially allow two A/N repetitions if the retransmissions are done every 2 TTIs.
- Chair wonders how the scheduling is done. Huawei thinks it would follow normal scheduling.
- Nokia Net wonders if we can use a better name for the feature. One option can be unsolicited retransmission. Ericsson agrees we should have a better name, maybe blind retransmissions.
- Ericsson thinks that the limitations on the max number of retransmissions should be specified in the MAC.

It is proposed RAN2 to agree on the combinations of the improved HARQ retransmission feature with the legacy features, such as DC-HSDPA, 4C-HSDPA, 8C-HSDPA, Multiflow and DL MIMO

- Ericsson wonders if we have analysed the DL MIMO scenario and thinks that it may be complex. Huawei wonders what the potential complexity could be. Ericsson thinks that MIMO can be complex since we have retransmissions across streams

It is proposed RAN2 to agree that the improved HARQ retransmission feature can be only applied to the serving HS-DSCH cell

- Nokia Net and Ericsson wonder why we would limit this to serving HS-DSCH cell and not the secondary serving HS-DSCH cell. Huawei thinks that one reason was to not increase UE complexity.

=> Noted

Not treated

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R2-153205 Introduction of improved HARQ retransmission for HSDPA Huawei, HiSilicon CR 25.308 13.0.00169 B Rel-13 UTRA_EDL_L23-Core
R2-153206 Introduction of improved HARQ retransmission for HSDPA Huawei, HiSilicon CR 25.321 12.2.00812 B Rel-13 UTRA_EDL_L23-Core
R2-153207 Introduction of improved HARQ retransmission for HSDPA Huawei, HiSilicon CR 25.331 12.6.05779 B Rel-13 UTRA_EDL_L23-Core
R2-153208 Introduction of improved HARQ retransmission for HSDPA Huawei, HiSilicon CR 25.306 12.5.00487 B Rel-13 UTRA_EDL_L23-Core

Working assumption:
- RAN2 will specify the blind HARQ retransmission operation for CELL_DCH UE
- The blind HARQ retransmissions will apply to both signalling and data transmission.
- Blind HARQ retransmission feature can work in combination with the following with the legacy features, DC-HSDPA, 4C-HSDPA, 8C-HSDPA, and Multiflow. FFS is combination with DL MIMO is allowed
- It is proposed RAN2 to agree that the blind HARQ retransmission feature can be applied to the serving and secondary HS-DSCH cells
- The re-transmissions will be scheduled using legacy scheduling mechanisms and the UE will report A/N feedback on a per transmission basis.
- The network can ensure that A/N repetitions don't collide or can be configured by proper scheduling and configuration.
- No restrictions on number of total HARQ retransmissions should be specified

11.1.5 Other

Discuss whether a conclusion on the benefits and consensus on a solution can be achieved for UE state transition and synchronous RRC reconfiguration

Contributions on RAN2 specific aspects related to optimization from IDLE to CONNECTED state can be submitted here.

R2-153116 Optimizations for the IDLE to CONNECTED state transition Nokia Networks discussion
- Ericsson thinks that we should send an LS to RAN3 but not mandate that they specify this. We should indicate what RAN2 is considering and RAN3 should discuss.

=> RAN2 will send an LS to RAN3 indicating the solution RAN2 is considering and that it finds it beneficial.
- Ericsson wonders if there are any RAN2 impacts. Nokia Net indicates that R2-153845 discusses the RAN2 impacts.

R2-153893 LS to RAN3 on optimization of Idle to connected mode transition Nokia Networks LS out to RAN3 from RAN2 Rel-13 UTRA_EDL_L23-Core
- Ericsson thinks that we should ask RAN3 to confirm the benefits of the feature. Nokia Net thinks that RAN3 can discuss the feature and if they have any concerns they can indicate their concerns to us.

> RAN2 has discussed optimizing the latency of idle to connected mode state transition and has concluded that it could be beneficial if the RNC provides additional information to the Node-B to facilitate acquisition of a common E-DCH resource. If Node B wants to initiate common E-DCH resource acquisition, it can send the corresponding HS-SCCH order to the UE.
>
> **2. Actions:**
>
> **To RAN3**:
>
> RAN2 kindly asks RAN3 to take the conclusion into account.

=> The LS is agreed with the changes above in R2-153895

R2-153117 Latency reduction for uplink signalling traffic Nokia Networks discussion
=> revised in R2-153845
R2-153845 Latency reduction for uplink signalling traffic Nokia Networks discussion

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- Huawei wonders what is meant by different traffic types. Nokia Net indicates that it is CCCH or DCCH.
- Huawei thinks that a higher power would impact the interference level in the network. Nokia Net thinks that the proper value should be decided by the network, but since the signalling traffic volume of DCCH/CCCH is much lower than the overall UL traffic the impact is not very large. Huawei thinks that there could be use cases where many UE start UL signalling at the same time.
- Ericsson wonders how much gains the improvement would provide.

=> Noted

Not treated

R2-153192 Discussion on the way forward of objectives (5) and (6) for EDL Huawei, HiSilicon discussion

R2-153580 Improved synchronized RRC procedures Ericsson discussion

R2-153748 Enhanced synchronous RRC re-configuration procedure Nokia Networks discussion

R2-153750 Autonomous state transition Nokia Networks discussion

Discussions:

- Huawei doesn't think a consensus has been reached.
- Ericsson thinks that without these changes, we can't speed up the synchronous re-configurations. Nokia Net agrees that we won't be able to speed up the synchronous procedures but we also have asynchronous procedures.

After comeback

- Huawei thinks that for objective 5 (autonomous state transition) there seems to be a consensus for the RRC layer handshake
- Ericsson wonders if there will be a RRC configuration option whether to use the procedure or not. Companies confirm that this is the understanding
- Huawei thinks that for objective 6 most companies are fine with the MAC layer handshake (Solution 1)

=> RAN2 has decided that for autonomous state transition RAN2 will work on RRC layer handshake (solution 3)
=> For Improved synchronize RRC procedures RAN2 will work on the MAC layer handshake solution (solution 1)

Not treated

R2-153581 Improved synchronized RRC procedures Ericsson CR 25.321 12.2.00813 B Rel-13 UTRA_EDL_L23
NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet

R2-153582 Improved synchronized RRC procedures Ericsson CR 25.331 12.6.05783 B Rel-13 UTRA_EDL_L23
NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet

R2-153118 Release of dedicated RNTIs Nokia Networks discussion

- Qualcomm wonders how this will work and if we remove the dedicated RNTI we will remove the ability to do seamless transitions.

=> Noted

Withdrawn

R2-153120 Latency reduction for uplink signalling traffic Nokia Networks discussion

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11.2 WI: Power saving enhancements for UMTS

(UTRA_SDATA_POWSAV-Core, leading WG: RAN2, started: June 15, target: Mar 2016, WID: RP-151092)

Time budget: 2 TUs

R2-153537 Workplan WI Power Saving enhancements for UMTS Ericsson discussion

- Huawei: 3 options are listed, as agreed by SA2. What about the option of eDRX within SFN limit of 40sec?
- ERI: no details have been provided in this paper, but we agree we should discuss that.
- NN: does the TU allocation depend on the selected solution?
- ERI: no issue is expected at this time. We'll see how things progress in RAN2.

=> Noted

11.2.1 Extended DRX mechanisms in Idle mode

R2-153501 Considerations on DRX extension beyond SFN limit in idle mode Huawei, HiSilicon discussion

- ERI: the paper focuses on DRX > 40.96. Our understanding is that those considerations may be generic to eDRX, e.g. the timer based solution may also apply to DRX < 40.96
- Huawei: we can discuss more based on other contributions.
- NN: agree that solutions may apply to both DRX ranges, but certain issues may differ, e.g. paging.

=> Noted

R2-153121 Further considerations for DRX cycle configurations Nokia Networks discussion

- ERI: about CS attach, we agree with the observation. Our understanding is that this enhancement should apply to PS-only UEs.
- NN: we agree
- ERI: in RAN2 LTE there was some discussion on e.g. the support of ETWS, but no final conclusion.
- ERI: about specs impact, the impacts of the timer-based solution may be larger than what is described in the paper, e.g. on 25.304

=> Noted

Working assumption: we can agree that eDRX should apply only to UEs not attached to the CS domain. FFS about the support of ETWS, PWS, PS Emergency calls, etc.

R2-153540 eDRX solution in Idle mode Ericsson discussion

- Huawei: in Table1, HSFN impacts are limited to UE and RAN. What about CN impacts? E.g the extended k range would be an impact.
- ERI: agree. CT1/NAS specs are impacted
- Huawei: for the clock based solution, there should also be RAN impacts
- ERI: no spec changes, but e.g. the GPS time should be broadcast
- NN: in Fig.1 we understand that SGSN may still control the paging and avoid page buffering in RAN
- ERI: in the SA2 tech endorsed solutions, in the RAN based HSFN solution, CN is not SFN aware, thus paging buffering in RAN is assumed R2-153498 Discussion on DRX extension configuration in idle mode Huawei, HiSilicon discussion
- ERI: we don't see much value in the use case of DRX < 40sec, thus our main interest is in very long DRX. Thus we prefer to keep it simple, e.g. not to have two different options/solutions.
- NN: one common solution is also preferable in our view; no strong opinion on the need/value of DRX <40sec option.
- HW: there may be uses cases, e.g. for future PS-only devices, where DRX<40sec may be valuable. In that case, we would like to use legacy DRX below 40sec
- ERI: the option of DRX<40sec should be supported, but we prefer to define one common solution.
- Huawei: below 40sec, MIB reading would be an issue (battery wise), thus legacy DRX may be better

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- ERI: agree that MIB reading may not be optimal, but shorter DRX values should no tbe the main use case
- NN: two different RAN algorithms/implementations seem unnecessary complex, thus why we prefer one common solution.

=> Noted

Working agreement: we will standardize the timer based solution, as endorsed by SA2, for Idle mode eDRX in UMTS, for both DRX cycles below and above 40.96 sec. The solution

- Chair: Majority of companies assumes that the solution shall be RAN transparent.

- NN: the assumption that the solution is RAN transparent is a key reason for us to agree on the above working agreement; otherwise we could consider other solutions.

R2-153541 Measurements and mobility with I-eDRXEricsson discussion
- Huawei: on Proposal1, can you be more specific on the RAN4 impacts? About proposal2, can you please clarify the expected UE behaviour?
- ERI: we can discuss more on p1 as part of the proposed LS-out. On P2, we can think/discuss more.

=> Noted

R2-153542 LS on eDRX measurements in Idle mode for UMTS Ericsson LS out
- Huawei: may be we can add some examples on the value/range of the eDRX cycle
- NN: may be we can reword the sentence “RAN2 assumed that the UE is not required to measure during the sleep period” as e.g. “RAN2 assumed that the UE shall not measure during the sleep period”.
- ERI: we can consider some rewording
- NN: About the sentence “existing DRX measurement requirements apply during the paging window”, is the intention to re-use the existing requirements for the entire PTW, or part of it?
- ERI: up to RAN4.

=> LS is revised in R2-153896.

R2-153896 LS on eDRX measurements in Idle mode for UMTS Ericsson LS out
Rel-13 UTRA_SDATA_POWSAV-Core

=> The LS is agreed in R2-153902

11.2.2 Extended DRX mechanisms in Connected Mode

R2-153484 Discussion on the way forward for the extended DRX for connected mode Huawei, HiSilicon discussion

=> Noted

R2-153543 eDRX solution in Connected mode Ericsson discussion
- Huawei: about the 2nd PICH, do you have any concern on the impacts (on legacy UEs) due to a large number of eDRX UEs?
- ERI: the small eDRX cycle length (e.g. up to 20s) should not cause significant impacts

=> Working assumption eDRX in connected mode is not supported

=> Noted

R2-153544 Measurements and mobility with C-eDRX Ericsson discussion

=> Not treated

R2-153545 LS on eDRX measurements in PCH state for UMTS Ericsson LS out

=> Not treated

11.2.3 Other

R2-153122 Options for quick return to PSM idle mode Nokia Networks discussion

=> Noted

R2-153495 Considerations on quick return into power saving mode Huawei, HiSilicon discussion

=> Noted

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R2-153546 Quick return into power saving Ericsson discussion
=> Noted

=> RAN2 agrees that a NW based solution is preferred, and a LS will be sent to RAN3. FFS if there is need to extend it to eDRX as well

R2-153547 LS on quick return into PSM for UMTS Ericsson LS out
- Chair: Change SA3 to RAN3
- Some rewording will be proposed

=> LS is revised in R2-153897
R2-153897 LS on quick return into PSM for UMTS Ericsson LS out Rel-13 UTRA_SDATA_POWSAV-Core
=> Actions should be to RAN3
=> The LS is agreed in R2-153903

R2-153503 Draft LS to RAN3 on Quick return to PSM Huawei LS out
= > Not treated

Spec impacts
Not treated
R2-153502 Stage 3 impacts analysis on DRX extension within SFN limit for both idle and connected mode Huawei, HiSilicon discussion
R2-153538 eDRX RAN2 specification impact Ericsson discussion
R2-153539 Introduction of extended DRX in Idle and Connected mode Ericsson CR 25.300 12.4.0 0020 B Rel-13 UTRA_SDATA_POWSAV-Core

11.3 WI: Support of EVS over UTRAN CS

(EVSoCS_UTRAN-Core; leading WG: RAN2, started: Dec. 14, target: Sep 15, WID: RP-142282)

Time budget: 1 TU

R2-153906 Minutes of Joint RAN1 and RAN2 EVS session Ericsson Discussion Rel-13 EVSoCS_UTRAN-Core
- Comeback from joint session – LS related to R2-153694 revised in R2-153899
=> Noted

R2-153899 Draft Reply LS on EVSoCSQualcomm Incorporated LS out
=> References need to be deleted
=> The LS is agreed in R2-153904 with the deletion of references above

Documents in this agenda item were handled in a joint RAN1 and RAN2 session – with notes captured in R2-153906

Incoming LS
R2-153037 Reply LS to R2-150598 and R2-151734 on EVS over UTRAN (S4-150870; contact: Ericsson) SA4 LS in Rel-13 EVSoCS
=> Noted
R2-153043 Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C4-151290; contact: Ericsson) CT4
=> Noted
R2-153039 Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C1-153239; contact: Qualcomm) CT1 LS in cc: RAN2Rel-13 EVSoCS
=> Noted
R2-153040 Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C3-153456; contact: Qualcomm) CT3 LS in cc: RAN2Rel-13 EVSoCS
=> Noted

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Discussion

R2-153479 Additional radio bearer combination for EVS over CS Huawei, HiSilicon discussion
=> Noted

R2-153688 Considerations on EVSoCS error protection Qualcomm Incorporated discussion
=> Noted

R2-153690 Considerations on EVSoCS mode sets and RABs Qualcomm Incorporated discussion
=> Noted

R2-153691 Examples of EVS CS RABs and configuration parameters Qualcomm Incorporated discussion
=> Noted

R2-153694 Draft Reply LS on EVSoCS Qualcomm Incorporated LS out
=> revised in R2-153899R2-153899 Draft Reply LS on EVSoCS Qualcomm Incorporated LS out
=> agreed in R2-153904

11.4 SI: Study on Network-Assisted Interference Cancellation and Suppression for UMTS

(FS_UTRA_NAICS, Leading WG: RAN1, started: Dec. 14, target: Sept. 2015, SID: RP-150174)

Time budget: 1.5 TU

R2-153186 Impacts of NAICS solutions in RAN2 Huawei, HiSilicon discussion
NN RAN1 have a CB on conclusions later this week, so what is the intention of the paper?. Huawei indicate it is only for information.

=> Noted.

11.5 WI: Multiflow Enhancements for UTRA

(HSDPA_MFTX_enh-Core, leading WG: RAN2, started March 15, target:Sep. 15 , WID: RP-150288)

Time budget: 0.5 TU

Incoming LS

R2-153013 LS on RAN1 Multiflow 3F-4C agreements (R1-153694; contact: Nokia Networks) RAN1 LS in Rel-13 HSDPA_MFTX_enh-Core
- Qualcomm wonders why CQI repetition was only allowed for some configurations in Rel-11. Nokia Networks explains that it depends on the HS-DPCCH format and the same limitations would apply for Rel-13.

=> Noted

Discussion

R2-153073 Remaining aspects on the Multiflow 3F-4C configuration Nokia Networks discussion
- Huawei thinks that the HARQ A/N repetition agreement should have 25.331 impacts. Nokia Net explains that there is impact but due to Rel-11 existing text we do not have to make any changes.
- Ericsson wants to confirm that in Figure 4a (right) whether the F1 frequency is the primary freq. Nokia Net confirms.

=> Use the relative order of secondary serving HS-DSCH cells to determine their mapping to CQIs
=> If a UE supports dual-band 3F-4C with two cells on two frequencies in band A and two cells on one frequency in band B, then a UE also supports a combination with two cells on one frequency in band A and two cells on two frequencies in band B (see Figure 4a).
=> If a UE supports dual-band 3F-4C with three cells on two frequencies in band A and one cell on one frequency in band B, then a UE also supports a combination with one cell on one frequency in band A and three cells on two frequencies in band B (see Figure 4b).
=> The capability signalling for this combinations will follow the same signalling mechanism as previous releases – indicating number of cells/frequencies supported in each band.
=> Noted

R2-153074 Introduction of the Multiflow 3F-4C configuration Nokia Networks CR 25.302 12.1.00237 B Rel-13 HSDPA_MFTX_enh-Core

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- ALU has reviewed the CR and thinks everything is good
- Huawei thinks that table Table 2-5: FDD Downlink and Uplink (Multiflow) only includes one secondary HS-DSCH and wonders if we need to include a new column for this configuration.

=> The CR is revised in R2-153894

R2-153894 Introduction of the Multiflow 3F-4C configuration Nokia Networks CR 25.302 12.1.00237 B 1 Rel-13 HSDPA_MFTX_enh-Core

=> Update the heading of the table 2-4 to make it look similar to 2-5
=> The CR is agreed in R2-153900

R2-153075 Introduction of the Multiflow 3F-4C configuration Nokia Networks CR 25.321 12.2.00810 B Rel-13 HSDPA_MFTX_enh-Core

=> The CR is agreed

R2-153076 Introduction of the Multiflow 3F-4C configuration Nokia Networks CR 25.331 12.6.05776 B Rel-13 HSDPA_MFTX_enh-Core

=> Change to from three frequencies to two frequencies
=> In 8.5.71 link the “numbering of entries” to 3F-4C

- Qualcomm wonders if we should use the same terminology as multi-carrier for “number of entries”. Nokia Net indicates that the same terminology is used.
- Huawei thinks that current text on HARQ A/N repetition doesn’t distinguish between intra-Node B and inter-Node B. Nokia Net thinks that the Rel-11 text should only be applicable for inter-Node B as all these restrictions apply to inter-Node B case. Chair thinks that this is not clear in the RAN2 specs. Huawei thinks that the legacy text in Rel-11 is applicable to intra-Node B and inter-Node B

=> Check whether for Rel-11 the text is applicable to both intra-/inter-Node B operation and whether RAN1 specifies something in their specs

- Ericsson thinks that Section 8.1.3.6 may need to be updated to reflect up to three frequencies
- Qualcomm wonders where we would specify the dependency that if you support 3F-4C then you also support 2F-4C. Nokia Net needs to check
- Qualcomm thinks we can make Note 6 more explicit to indicate all 4 scenarios

=> The CR is revised in R2-153891

R2-153891 Introduction of the Multiflow 3F-4C configuration Nokia Networks CR 25.331 12.6.05776 B 1 Rel-13 HSDPA_MFTX_enh-Core

=> add (assisting) to first changes on section 8.5.71

- Ericsson thinks that the changes in table 10.3.3.42 extending the allowed value to be signalled for band B are not needed.

=> remove the tabular changes for band B in table 10.3.3.42
=> The CR is agreed in R2-153901 CR 5776 R2 with the changes above

11.6 WI: HSPA Dual-Band UL carrier aggregation

(HSUPA_DB_MC-Core; leading WG: RAN4; REL-13; started: Dec. 14; target: Dec. 15; WID: RP-142237)

Time budget: 0.5 TU

Incoming LS

R2-153018 LS to RAN2 on HSPA DB UL CA agreements (R4-153782; contact: Qualcomm) RAN4 LS in

=> Noted

Discussion

R2-153695 RAN2 impacts due to the introduction of DB-DC-HSUPA Qualcomm Incorporated discussion

- Nokia Net thinks that the greedy power allocation algorithm may result in the UE always starting with the primary carrier.
- Nokia Net has some concerns on changing the formula.
- Intel thinks that we should wait for RAN4 to finish their discussions on the allowed classes.

R2-153696 Draft Reply LS on DB-DC-HSUPA Qualcomm Incorporated LS out Late

=> Not treated

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11.7 WI: Application specific Congestion control

(ACDC-RAN-Core; leading WG: RAN2; REL-13; started: Mar. 15; target: Dec. 15; WID: RP-150512)

Time budget: 0.25 TU

UMTS specific aspects of ACDC

R2-153180 Discussion on ACDC in UMTS Huawei, HiSilicon discussion
=> Confirm LTE decision for Proposal 1-3
- Ericsson thinks that for Proposal 4 we need to discuss and verify before confirming the LTE agreements.
- Intel agrees for DSAC case, the UE behaviour in the proposal is acceptable. Ericsson thinks that we need to discuss it further. Intel indicates that last meeting we decided that ACDC applies to PS data only and DSAC as well, so they don't see an issue.
- Intel wonders about the PPAC case. Ericsson thinks that PPAC and ACDC are not related and won't happen at the same time.
- Intel wonders what happens to EAB.
- Qualcomm wonders if ACDC applies to emergency calls. Intel's understanding is that it shouldn't but hasn't been agreed yet.

=> Noted

R2-153251 Support of ACDC in UTRAN Ericsson discussion
- Intel thinks that we need to signal the flag for all the categories as in LTE they decided to signal all of the categories from highest to lowest.
- Intel thinks that if we have a single flag we may not be able to assign different probability of access to different categories as in LTE. Huawei thinks that we should follow the EAB like solution.
- Intel thinks that we should support a new ACDC SIB and we should discuss it independently from LTE. Ericsson agrees and in UMTS we have additional considerations. Qualcomm has a preference for a new SIB.

=> Noted

Agreeements
- No special behaviour from UE when both ACDC barring information and PPAC are included in SIB. The UE applies the mechanisms independently for different purposes
- FFS on UE behaviour if both ACDC barring information and DSAC are included
- The ACDC information will be provided in a new SIB for UMTS

11.8 UMTS TEI13 enhancements

Small Technical Enhancements affecting UMTS Rel-13 that do not belong to any Rel-13 WI.

Note: A TEI enhancement proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

R2-153084 Multi-carrier HSUPA with CS Nokia Networks discussion
- Qualcomm supports the proposal
- Huawei also supports but thinks we should generalize to DCH
- Ericsson thinks that we should have it as a Rel-14 WI. There are multiple group impacts. Nokia Net thinks that functionally there is no impact to other groups, just small modifications.
- Ericsson thinks that in RAN4 there may be a need for some changes. Qualcomm thinks that after some verification they think that the existing evaluations can be used.

=> Noted

R2-153176 Considerations on DL RLC PDU size configuration for D2F state transition Huawei, HiSilicon discussion
Late

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- Qualcomm thinks that option 3 would have ASN.1 impact and procedural impacts related to DL PDU size selection.
- Qualcomm would prefer a solution that is available for legacy releases
- Ericsson thinks that option 2 and 4 can already be done in existing implementations

=> Noted

R2-153177 Correction on DL RLC PDU size configuration for D2F state transition Huawei, HiSilicon CR 25.331 12.6.05777 F Rel-13 TEI13
Late
=> Not treated

R2-153533 Access Groups based access control enhancements Ericsson discussion

Support of Access group mechanisms for URA_PCH with seamless transition to CELL_FACH

- Huawei thinks this proposal makes sense and wonders if we can do it in DL enhancements WI instead. Ericsson thinks that we should not link the features as they are independent features.

Support of Access group mechanisms for URA_PCH/CELL_PCH without seamless transition to CELL_FACH

- Nokia Net thinks that we should allow this and maybe we can consider introducing it directly in Rel-12.
- Qualcomm wonders why we didn't include this case in Rel-12. Ericsson thinks that we didn't think of this case. Huawei indicates that in Rel-12 we decided to only control the DTCH and not control the DCCH, since the network can include the wait time in the CELL_UPDATE confirm. Qualcomm wonders if there is a need in this case.
- Nokia Net wonders what happens with the measurement reporting in case of seamless transition, as the DCCH measurement reporting is not blocked.
- Ericsson indicates that during the small data study item phase we concluded that access group mechanisms in URA/PCH without seamless transition can be beneficial

=> Noted

Agreements

=> Access group mechanisms for URA_PCH with seamless transition to CELL_FACH will be supported in Rel-13

Not treated

R2-153534 Access Groups based access control enhancements Ericsson CR 25.300 12.4.00019 B Rel-13 TEI13, EDCH_enh-Core

R2-153535 Access Groups based access control enhancements Ericsson CR 25.306 12.5.00489 B Rel-13 TEI13, EDCH_enh-Core

R2-153536 Access Groups based access control enhancements Ericsson CR 25.331 12.6.05781 B Rel-13 TEI13, EDCH_enh-Core

12 Outgoing LSs and email discussions from UTRA session

12.1 Agreed outgoing LSs from UTRA session

R2-153895 LS to RAN3 on optimization of Idle to connected mode transition RAN2 LS out to RAN3 from RAN2 Rel-13 UTRA_EDL_L23-Core

R2-153902 LS on eDRX measurements in Idle mode for UMTS RAN2 LS out to RAN4 from RAN2 Rel-13 UTRA_SDATA_POWSAV-Core

R2-153903 LS on enabling return into PSM for UMTS RAN2 LS out to RAN3 from RAN2 Rel-13 UTRA_SDATA_POWSAV-Core

R2-153904 Reply LS on EVSoCS RAN2 LS out from: RAN2 to: SA4 cc: RAN1, RAN3 Rel-13 EVSoCS_UTRAN

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12.2 Email discussions from UTRA

✉ **[91#00][UMTS/IncMon] – Agree to 25.331 CR**
- Agree to 25.331 CR (R2-153905)
- One week after the meeting

13 Comebacks

This agenda item will be used during the meeting. No documents are supposed to be submitted by delegates.

13.1 LTE breakout session

13.1.1 Report from the User Plane session

R2-153861 Report from UP Session, Vice-Chair (LGE)

CA enhancements

- Nokia Networks thinks that previously the 15 bit SN was only specified for RLC AM. Does the same apply for the new 23 bit SN? Nokia Networks thinks that it would be sufficient for AM bearers. Samsung agrees that this is not needed for UM bearers.

=> The PDCP SN of 23 bit applies only for AM bearers

- Ericsson thinks that we need to clarify when which PHR format is used. 8 vs. 32 is decided based on the number of carriers. It should also be impliticly derived from whether PUCCH is configured for SCell whether the Type2 format is used. At the moment, we agreed that there is explicit configuration. VC suggests to discuss this further. Nokia Networks that one could use the old format even when using up to 8 carriers and no PUCCH on SCell. Nokia Networks thinks we need to indicate explicitly whether the UE should use the new or the old format(s). If the new formats are used, the UE determines the applicable format from the actual configuration. Ericsson thinks that there is an impact on MAC and we should discuss it during the email discussion where we endorse the running CR.

=> Discuss further offline how to agreements made in this meeting affect MAC operation.

=> CB: [LTE/DCe] Send LS to RAN3, CT4, SA3 to inform that PDCP SN size is increased to 23 bits in R2-153866 (Nokia).

R2-153866 PDCP SN increase; to RAN3, CT4, SA3

=> Remove “, potentially also to SA3 specifications.”

=> Put SA3 to CC

=> Remove yellow highlight

✓ => With this change the LS on “PDCP SN increase” to RAN3, CT4 (CC: SA3) is approved in R2-153873

Dual Connectivity

✉ **[91#30][LTE/DCe] SFN/subframe offset reporting (NTT DOCOMO)**
-related R2-153175
=> Intended outcome: Email discussion report to next meeting

13.1.2 Report from LTE Break-Out session

R2-153885 Report from LTE Break-Out Session, Vice-Chair (InterDigital)

ProSe Rel-13

R2-153881 Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (R2-153030/S2-152695; contact: Qualcomm) Qualcomm LS out from RAN2 to: SA2 cc: RAN1 Rel-13 eProSe-Ext-SA2

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✓ => The LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay to SA2 (CC: RAN1) is approved in R2-153887

R2-153883 LS on Inter-PLMN sidelink discovery transmission Huawei LS out from RAN2 to: SA2 and CT1 Rel-13 LTE_eD2D_Prox-Core
=> Change to "- The UE is not expected to perform any PLMN change for the purpose of inter-PLMN sidelink discovery transmission"
✓ => With this change the LS on Inter-PLMN sidelink discovery transmission to SA2 and CT1 is approved in R2-153886

eDRX

R2-153853 Draft reply LS on paging coordination in extended idle mode DRX; Qulacomm; LS out; from RAN2 to: SA2, RAN3 Rel-13 FS_eDRX
- Intel thinks that the first mail needs to be adjusted to reflect the agreement.
- ALU would like to clarify that there is no need for tight network synchronization
- ZTE thinks that the second action should be for RAN3. QC thinks that it is not clear whether we will need some X2 aspects and hence RAN3 might not need to be involved. QC thinks that on a high level SA2 should start the work first. Huawei thinks that the synchronization between cells is clearly in the scope of RAN3. But Huawei thinks that the actual tasks are different for the two groups.

=> [eDRX] An update LS may be provided in R2-153888

R2-153888 Draft reply LS on paging coordination in extended idle mode DRX; Qulacomm; LS out; from RAN2 to: SA2 Rel-13 FS_eDRX

R2-153909 Draft reply LS on paging coordination in extended idle mode DRX; Qulacomm; LS out; from RAN2 to: SA2 Rel-13 FS_eDRX
=> Remove "RAN2 has not defined a range for the H-SFN timing difference, but it is expected to be in the order of seconds."
✓ => With this change the reply LS on paging coordination in extended idle mode DRX to RAN3 and SA2 is approved in R2-153914

R2-153882 LS on eDRX MediaTek Inc. LS out from RAN2 to: RAN4 Rel-13 LTE_extDRX-Core
✓ => The LS on eDRX to RAN4 is approved in R2-153915

Discuss/agree whether we should send an LS to RAN4

✉ **[91#07][LTE/eD2D] One week: LS to RAN4 (QC)**
-Agree on LS to RAN4 notifying them of RAN2 agreements related to gaps for inter-frequency/inter-PLMN discovery
=> Intended outcome: Approved LS to RAN4

13.2 UMTS breakout session

13.3 Main session

This section contains a temporary list of comebacks (press F9 to update while the cursor is inside the list).

No table of figures entries found.

13.4 Email Discussions from main session

This section contains a preliminary list of email discussions (press F9 to update while the cursor is inside the list). A complete list will be provided on the RAN2 email reflector after the meeting.

✉ [LTE/WiFi] Clarification on cell selection sequence (HTC) - Update Consequences if not approved and Inter-operability => Intended outcome: Agreed CR to RAN plenary in R2-153917 CR1880 R2

✉ [LTE/CA] Additional MIMO/CSI capability for contiguous intra-band (Intel) - Final check and clarification that the signaling applies to TM9/10 intra-band contiguous - Based on R2-153942 and R2-153943 => Intended outcome: Agreed 36.306 and 36.331 CRs to plenary

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- [LTE/CA] Support for 4 layer MIMO with TM3 and TM4 (Nokia Networks) - Careful check of CRs R2-153951 to R2-153956 => Intended outcome: Agreed 36.306 and 36.331 CRs to plenary
- [LTE/IDC] One week: IDC signalling enhancement for UL CA (Ericsson) - Final check of CR in R2-153872 - Provide additional CRs for Rel-11 => Intended outcome: Approved Rel-11 and Rel-12 CRs for 36.331 and 36.306 to RAN plenary
- [LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls (Nokia Networks) - Discuss in which message to include the indication => Intended outcome: CRs to the next meeting
- [LTE/ProSe] One week: Terminology alignment (Intel) - Final check of CR in R2-153958 => Intended outcome: Agreed 36.331 CR to plenary in R2-153961 CR1912 R1
- [LTE/LAA] One Week: Running stage-2 CR (Huawei) - Capture agreements from this meeting => Intended outcome: Technically endorsed running 36.300 CR in R2-153907 CR0787 R1
- [LTE/CAe] One week: Running 36.321 CR (Ericsson) - Align with RRC CR => Intended outcome: Technically endorsed running 36.321 CR in R2-153964
- [LTE/CAe] One week: Running 36.331 CR (Nokia Networks) - Align with MAC CR => Intended outcome: Technically endorsed running 36.331 CR in R2-153946
- [LTE/CAfe] Capability signalling enhancements (Nokia Networks) - Identify feasible solutions to reduce capability signalling - Ensure backwards compatibility => Intended outcome: Email discussion report to the next meeting => Intended outcome: LS to RAN4 if needed
- [LTE/SC-PTM] Scheduling pattern, DRX and Change Notification (Huawei) - Discuss whether SC-PTM configuration also comprises the scheduling period, scheduling window and start offset which indicates the subframes where UE should monitor the associated Group-RNTIs on PDCCH. - Discuss whether the pattern is per service - Discuss whether more flexible schemes should be considered (e.g. period extends when valid PDCCH assignment detected…) - Discuss how change notification is provided => Intended outcome: Email discussion report to next meeting
- [LTE/SC-PTM] Service continuity (Huawei) - Discuss suitable means to realize service continuity - Consider overhead in broadcast and e.g. update frequency => Intended outcome: Email discussion report to the next meeting
- [LTE/SC-PTM] Running stage-2 CR (Huawei) - Capture the agreements from this meeting => Intended outcome: Endorsed running stage-2 CR
- [LTE/MTC] One week: Running stage-2 CR (Ericsson) => Intended outcome: Technically endorsed running 36.300 CR in R2-153967; an LS to RAN1 with the attached running CR in R2-153968
- [LTE/MTC] Timer handling for extended coverage (Ericsson) - Discuss how MAC and RRC timers relevant for RA and connection establishment need to be extended for UEs in extended coverage. => Intended outcome: Email discussion summary to the next meeting
- [LTE/MTC] Mobility Support (MediaTek) - continue discussion on mobility support also taking into account recent input from RAN4 - Can address IDLE and CONNECTED mode => Intended outcome: Email discussion report to next meeting
- [LTE/WiFi] Running 36.300 CR (Intel) - Incorporate the agreements of this meeting in the latest endorsed CR - Clarify the figure - Incorporate RAN3 CR into this CR => Intended outcome: Technically endorsed 36.300 CR in R2-153972
- [LTE/WiFi] Radio Link Monitoring for WLAN aggregation (Huawei) => Intended outcome: Email discussion summary to the next meeting
- [LTE/WiFi] RRM Measurement Framework (Intel) => Intended outcome: Email discussion summary to the next meeting
- [LTE/Load Balancing] Redistribution Schemes (ZTE) - Investigate advantages and benefits of schemes that can redistribute IDLE UEs (continuous randomization and one-shot mechanism) - Do not discuss existing dedicated reselection priorities provided during RRC connection release - Aim to converge to one solution => Intended outcome: Email discussion report and possibly draft CRs to next meeting

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- ✉ [LTE/MDT] TR 36.880 (CMCC) => Intended outcome: Agreed TR 36.880 v0.3.2 in R2-153971 for approval at RAN plenary
- ✉ [LTE/Latency] One week: Update of TR 36.881 (Ericsson) - Capture agreements from this meeting => Intended outcome: Agreed update of TR 36.881 v0.2.1 in R2-153910
- ✉ [LTE/Latency] Evaluation results (Ericsson) - All companies may provide comprehensive TPs with their assumptions, results and conclusions to the email discussion. Those parts can then be included in one big TP by the rapporteur. That TP will then be provided as input to the next meeting. Possibly, a conclusion for those results should be added => Intended outcome: TP with simulation assumptions, results and conclusions
- ✉ [LTE/DCe] SFN/subframe offset reporting (NTT DOCOMO) - related R2-153175 => Intended outcome: Email discussion report to next meeting
- ✉ [LTE/eD2D] One week: LS to RAN4 (QC) - Agree on LS to RAN4 notifying them of RAN2 agreements related to gaps for inter-frequency/inter-PLMN discovery => Intended outcome: Approved LS to RAN4

14 Outgoing LS from LTE and Joint

Draft LSs should be submitted to their corresponding agenda item if there is one. If there is no appropriate agenda item, draft LSs may be submitted to this agenda item.

Draft outgoing LSs (not related to any Agenda Item above)

Token Buckets

=> CBF: [QoS] A draft reply LS "on bitrate variations and handling in RAN" to SA4 may be provided in R2-153854 (Ericsson)

R2-153854 Draft reply LS on bitrate variations and handling in RAN (reply to R2-153036; contact: Ericsson); to SA4; LS out; Rel-13; QOSE2EMTSI;

✓ => The LS on bitrate variations and handling in RAN to SA4 is approved in R2-153916

Approved LSs

This section contains a list of approved outgoing LSs (press F9 to update while the cursor is inside the list).

- ✓ => The LS to CT1 and SA1 summarizing the ACDC agreements is approved in R2-153876
- ✓ => With this change the LS on "intra-band contiguous CA and intra-band non-contiguous CA" to RAN1 is approved in R2-153948
- ✓ => With this change the LS on decisions regarding rank3/4 in TM3 and TM4 for additional UE; to RAN1, CC: RAN, RAN4 is approved in R2-153931
- ✓ => The LS on ANR in case of MFBI to RAN3 is approved in R2-153959
- ✓ => The LS on SC-PTM transmission to RAN1 is approved in R2-153965
- ✓ => The Response LS on Paging for MTC to RAN3 is approved in R2-153966
- ✓ => With this change the LS on C-IoT/MTC data transmission targets for security-related procedures to SA3 is approved in R2-153969
- ✓ => With this change the Draft Reply LS on RAN Sharing Enhancements for LTE to RAN3 is approved in R2-153911
- ✓ => With these changes the Draft Response LS on Paging optimization to RAN3 and SA2 is approved in R2-153913
- ✓ => With this change the LS on "PDCP SN increase" to RAN3, CT4 (CC: SA3) is approved in R2-153873

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- ✓ => The LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay to SA2 (CC: RAN1) is approved in R2-153887
- ✓ => With this change the LS on Inter-PLMN sidelink discovery transmission to SA2 and CT1 is approved in R2-153886
- ✓ => With this change the reply LS on paging coordination in extended idle mode DRX to RAN3 and SA2 is approved in R2-153914
- ✓ => The LS on eDRX to RAN4 is approved in R2-153915
- ✓ => The LS on bitrate variations and handling in RAN to SA4 is approved in R2-153916

15 Any other business

Future meeting dates

Click here for the overview of all RAN2 and RAN meeting dates.

MEETING	DATES	LOCATION	HOST	CO-LOCATION
RAN #67	9 March – 12 March 2015 **	China	Shanghai	
RAN2 #89bis	20 April – 24 April 2015	Brastislava, Slovakia	EF3	RAN2 only
RAN2 #90	25 May – 29 May 2015	Fukuoka, Japan	JF3	RAN 1/2/3/4/5, SA2
RAN #68	15 June – 18 June 2015 **	Malmö, Sweden	EF3	
RAN2 #91	24 Aug. – 28 Aug. 2015	Beijing, China	Huawei	RAN 1/2/3/4/5
RAN #69	14 Sep. – 17 Sep. 2015 **	tbc, USA	NAF3 (tbc)	
RAN2 #91bis	5 Oct. – 9 Oct. 2015	Malmö, Sweden	EF3	RAN2 only
RAN2 #92	16 Nov. – 20 Nov. 2015	tbd, USA		RAN 1/2/3/4/5
RAN #70	7 Dec. – 10 Dec. 2015 **	Sitges, Spain	EF3	

EF3: European Friends of 3GPP
NAF3: North American Friends of 3GPP
JF3: Japanese Friends of 3GPP

For plans for email discussions after RAN2 #91 see Annex **F.Other**

Other

R2-153834 Reuse of LTE L2/L3 layers for Cellular IoT; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Ericsson LM, Mediatek Inc., Panasonic, Sierra Wireless SA, ZTE Corporation, Nokia Networks, Marvell, Intel Corporation, Sequans, Gemalto; discussion; only for Information

R2-153841 CIoT – Normative work plan and potential meeting schedule; Vodafone Group plc; other; only for Info; Rel-13;

R2-153842 Draft WID proposal for Clean Slate Cellular IoT (For Information only); Vodafone Group plc; other; only for Info; Rel-13;

Above 3 Tdocs not treated

16 Closing of the meeting (17:00)

The TSG RAN WG2 chairman Henning Wiemann (Ericsson) thanked the delegates for participating and contributing to RAN WG2 meeting #91. He thanked the Huawei for hosting this meeting.

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TSG RAN WG2 chairman Henning Wiemann (Ericsson) closed the meeting on Friday 28.08.2015 at about 17:00.

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Annex A:
List of participants

The list of participants of this RAN WG2 meeting #91 is be attached to this report.

Total number of participants: 289 (registered before the meeting: 345)

Annex B:
List of Tdocs

The list of Tdocs of this RAN WG2 meeting #91 is attached to this report.

Total number of Tdocs: 973 of which 55 Tdocs are not available, i.e. 918 Tdocs are available.

Annex C:
Incoming liaison statements for TSG RAN WG2 #91

RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-153004	Reply LS to S2-151423 = R2-151027 on proposed method of restricting access to IOPS cells (C1-152403; contact: AT&T)	CT1	S2-151423	noted		
R2-153005	Reply LS to S1-151622 = R2-151029 on handling of uncategorised applications in ACDC (C1-152413; contact: Qualcomm)	CT1	C1-152413	noted		
R2-153006	LS on Efficient Small Data Transfer (GP-150654; contact: Ericsson)	GERAN2	GP-150654	noted		
R2-153007	Reply to LS to S3-151418 = R2-152017 on C-IoT/MTC data transmission targets for security-related procedures (GP-150669; contact: Vodafone)	GERAN	GP-150669	noted		

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RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-153008	Explicit Congestion Notification for Lower Layer Protocols Submission (IETF LS; contact: EMC)	IETF		postponed		
R2-153009	LS on public safety discovery (R1-152422; contact: Qualcomm)	RAN1	R1-152422	noted		
R2-153010	Reply LS to S3-151524 = on public safety discovery from SA3 (R1-153555; contact: Qualcomm)	RAN1	R1-153555	noted		
R2-153011	LS on Type 1 discovery for partial and outside network coverage (R1-153667; contact: Qualcomm)	RAN1	R1-153667	noted		
R2-153012	LS on RAN1 agreements on CA Enhancement Beyond 5 Carriers (R1-153672; contact: Nokia Networks)	RAN1	R1-153672	noted		
R2-153013	LS on RAN1 Multiflow 3F-4C agreements (R1-153694; contact: Nokia Networks)	RAN1	R1-153694	noted		
R2-153014	Response LS to S2-150698 = R2-150027 on Paging Optimisation (R3-151280; contact: Ericsson)	RAN3	R3-151280	noted		
R2-153015	Response LS to R2-151786 on Paging for MTC (R3-151311; contact: Alcatel Lucent)	RAN3	R3-151311	noted	R2-153966	
R2-153016	LS on RAN Sharing Enhancements for LTE (R3-151316; contact: Nokia Networks)	RAN3	R3-151316	noted	R2-153911	
R2-153017	LS on overload of MME resource quotas in RAN sharing scenarios (R3-151317; contact: Alcatel Lucent)	RAN3	R3-151317	noted		
R2-153018	LS to RAN2 on HSPA DB UL CA agreements (R4-153782; contact: Qualcomm)	RAN4	R4-153782	noted		
R2-153019	LS Out on TDD + FDD dual UL UE behavior (R4-153889; contact: Ericsson)	RAN4	R4-153889	noted		

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RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-153020	LS regarding rank3/4 in TM3 and TM4 for additional UE categories (R4-153907; contact: Nokia Networks)	RAN4	R4-153907	noted		
R2-153021	LS response to R1-150919 = R2-151007 on measurement performance for MTC (R4-153909; contact: Ericsson)	RAN4	R4-153909	noted		
R2-153022	Reply LS to R2-150703 on LTE Rel-12 UE feature list (RP-151105; contact: NTT DOCOMO)	RAN	RP-151105	noted		
R2-153023	LS response regarding rank3/4 in TM3 and TM4 for additional UE categories (RP-151113; contact: Nokia Networks)	RAN	RP-151113	noted		
R2-153024	LS reply to R2-151789 on ProSe Priorities (S2-151810; contact: Intel)	SA2	S2-151810	noted		
R2-153025	LS reply to S3-151524 = R2-153035 on Public Safety discovery (S2-151813; contact: Qualcoomm)	SA2	S2-151813	noted		
R2-153026	Reply LS to C1-151597 = R2-151021 on network feature support for ProSe Discovery (S2-152064; contact: Qualcomm)	SA2	S2-152064	noted		
R2-153027	Reply LS to S2-151654 on requested feedback on TR 26.924 (S2-152081; contact: Ericsson)	SA2	S2-152081	noted		
R2-153028	LS on UE Handling of RAN Rules for WLAN Interworking (S2-152686; contact: Qualcomm)	SA2	S2-152686	postponed		
R2-153029	Reply LS to R3-151317 = R2-153017 on overload of MME resource quotas in RAN sharing scenarios (S2-152692; contact: Alcatel Lucent)	SA2	S2-152692	noted		
R2-153030	LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (S2-152695; contact: Qualcomm)	SA2	S2-152695	noted	R2-153887	
R2-153031	Reply LS to R3-151280 = R2-153014 on Paging Optimisation (S2-152696; contact: Alcatel Lucent)	SA2	S2-152696	noted		

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RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-153032	LS on paging co-ordination for extended idle mode DRX (S2-152697; contact: Qualcomm)	SA2	S2-152697	noted	R2-153914	
R2-153033	LS on extended connected mode DRX (S2-152698; contact: Qualcomm)	SA2	S2-152698	noted		
R2-153034	LS on ProSe coarse proximity estimation based on path loss (S2-152699; contact: T-Mobile)	SA2	S2-152699	noted		
R2-153035	Reply LS to S2-150691 = R2-151011 on public safety discovery (S3-151524; contact: Qualcomm)	SA3	S3-151524	noted		
R2-153036	LS on bitrate variations and handling in RAN (S4-150866; contact: Ericsson)	SA4	S4-150866	noted	R2-153916	
R2-153037	Reply LS to R2-150598 and R2-151734 on EVS over UTRAN (S4-150870; contact: Ericsson)	SA4	S4-150870	noted	R2-153904	
R2-153038	LS on update on Cooperation for Energy Efficiency Measurements (S5-153359; contact: Nokia Networks)	SA5	S5-153359	noted		
R2-153039	Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C1-153239; contact: Qualcomm)	CT1	C1-153239	noted		
R2-153040	Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C3-153456; contact: Qualcomm)	CT3	C3-153456	noted		
R2-153041	LS on ACDC mechanism (C1-153278; contact: LGE)	CT1	C1-153278	postponed	R2-153876	
R2-153042	LS on Completion of Study Item on Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things (FS_IoT_LC) (GP-151041; contact: Vodafone)	GERAN	GP-151041	noted		
R2-153043	Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C4-151290; contact: Ericsson)	CT4	C4-151290	noted		

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RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-153044	Reply LS to C1-152413 = R2-153005 on ACDC requirements (S1-152406; contact: LGE)	SA1	S1- 152406	noted	R2-153876	
R2-153045	Reply LS to R2-152838 on Type 2 Power Headroom reporting (R1-154764; contact: Intel)	RAN1	R1-154764	noted		
R2-153046	Response LS to S2-151423 = R2-151027 on proposed method of restricting access to IOPS cells (S1-152750; contact: Applied Communication Sciences)	SA1	S1-152750	noted		
R2-153047	Reply LS to S2-151810 = R2-153024 on ProSe Priorities (S1-152748; contact: Qualcomm)	SA1	S1-152748	noted		
R2-153048	Reply LS on 2 UL inter-band CA protection of GNSS (R4-154064; contact: NTT DOCOMO)	RAN4	R4-154064	noted		
R2-153049	Reply LS to R2-152856 on NS values in system information broadcast (R4-155258; contact: Ericsson)	RAN4	R4-155258	noted		
R2-153050	Reply LS to R4-153889 = R2-153019 on TDD + FDD dual UL UE behavior (R1-154905; contact: Qualcomm)	RAN1	R1-154905	noted		
R2-153051	LS response to R1-150919 = R2-151007 on measurement performance for Rel-13-MTC (R4-155112; contact: Ericsson)	RAN4	R4-155112	noted		
R2-153052	Reply LS to R1-150920 = R2-151008 on PRACH coverage enhancement (R4-155113; contact: Huawei)	RAN4	R4-155113	noted		
R2-153053	Reply LS to R1-145455 on the maximum power of the new UE power class for MTC (R4-155349; contact: Ericsson)	RAN4	R4-155349	noted		
R2-153054	LS reply to R2-152914 on measurements cell selection and reselection for MTC LC/EC (R4-155119; contact: Nokia Networks)	RAN4	R4-155119	noted		

postponed: LS answer was postponed to next RAN2 meeting (note: incoming LS will not be presented again at the next meeting and involved parties are requested to submit proposal for draft outgoing LS answer to next meeting).

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Summary:

- In total: 51 LSs (4 on UTRA, 42 on LTE, 3 on joint aspects)
- 0 resubmissions from RAN2 #90
- 51 incoming LSs were noted.
- 16 of the 51 incoming LSs were received during the RAN2 #91 meeting:
- For 3 incoming LS an LS answer was postponed.

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Annex D:
Outgoing liaison statements of TSG RAN WG2 #91

Only final outgoing LSs are listed here.

final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-153873	LS on extension to field length of PDCP Sequence Number (to: RAN3, CT4; cc: SA3; contact: Nokia Networks)	RAN3, CT4	SA3	Nokia Networks		Rel-13	LTE_CA_enh_b5C-Core	
R2-153876	Reply LS on ACDC mechanism (to: CT1, SA1; cc:-; contact: LGE)	CT1, SA1	-	LGE	R2-153041 = C1-153278, R2-153044 = S1-152406	Rel-13	ACDC-RAN-Core	
R2-153886	LS on Inter-PLMN sidelink discovery transmission (to: SA2, CT1; cc: RAN3; contact: Huawei)	SA2, CT1	RAN3	Huawei		Rel-13	LTE_eD2D_Prox-Core	
R2-153887	Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (to: SA2; cc: RAN1; contact: Qualcomm)	SA2	RAN1	Qualcomm	R2-153030 = S2-152695	Rel-13	eProSe-Ext-SA2	
R2-153895	LS to RAN3 LS on Idle to connected mode transition optimization (to: RAN3; cc: -; contact: Nokia Networks)	RAN3	-	Nokia Networks		Rel-13	UTRA_EDL_L23-Core	outgoing LS was sent on 26.08.2015 during the meeting
R2-153902	LS on eDRX measurements in Idle mode for UMTS (to: RAN4; cc: -; contact: Ericsson)	RAN4	-	Ericsson		Rel-13	UTRA_SDATA_POWSAV-Core	
R2-153903	LS on enabling return into PSM for UMTS (to: RAN3; cc: -; contact: Ericsson)	RAN3	-	Ericsson		Rel-13	UTRA_SDATA_POWSAV-Core	

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final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-153904	Reply LS on EVSoCS (to: SA4; cc: RAN1, RAN3; contact: Qualcomm)	SA4	RAN1, RAN3	Qualcomm	R2-153037 = S4-150870	Rel-13	EVSoCS_UTRAN-Core	
R2-153911	Reply LS on RAN Sharing Enhancements for LTE (to: RAN3, SA5; cc: SA1; contact: Nokia Networks)	RAN3, SA5	SA1	Nokia Networks	R2-153016 = R3-151316	Rel-13	RSE-RAN_LTE-Core	
R2-153914	Reply LS on paging co-ordination for extended idle mode DRX (to: SA2, RAN3; cc: -; contact: Qualcomm)	SA2, RAN3	-	Qualcomm	R2-153032 = S2-152697	Rel-13	LTE_extDRX-Core	
R2-153915	LS on extended DRX (to: RAN4; cc: -; contact: Media Tek)	RAN4	-	Media Tek		Rel-13	LTE_extDRX-Core	
R2-153916	LS on bitrate variations and handling in RAN (to: SA4; cc: -; contact: Ericsson)	SA4	-	Ericsson	R2-153036 = S4-150866	Rel-13	QOSE2EMTSI	
R2-153931	LS on decisions regarding rank3/4 in TM3 and TM4 for additional UE categories (to: RAN1; cc: RAN, RAN4; contact: Nokia Networks)	RAN1	RAN, RAN4	Nokia Networks		Rel-10	TEI10	outgoing LS was sent on 26.08.2015 during the meeting
R2-153948	LS on intra-band contiguous CA and intra-band non-contiguous CA (to: RAN1; cc: -; contact: Intel)	RAN1	-	Intel		Rel-12	LTE_CA-Core, TEI12	outgoing LS was sent on 26.08.2015 during the meeting
R2-153959	LS on ANR in case of MFBI (to: RAN3; cc: -; contact: Huawei)	RAN3	-	Huawei		Rel-8	TEI8	
R2-153965	LS to RAN1 on SC-PTM transmission (to: RAN1; cc: -; contact: Huawei)	RAN1	-	Huawei		Rel-13	LTE_SC_PTM-Core	

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final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-153966	Response LS on Paging for MTC (to: RAN3; cc: CT1, SA2, RAN1; contact: Alcatel-Lucent)	RAN3	CT1	Alcatel-Lucent	R2-153015 = R3-151311	Rel-13	LTE_MTCe2_L1-Core	
R2-153968	LS on Rel-13 low complexity and coverage enhanced Ues (to: RAN1; cc: -; contact: Ericsson)	RAN1	-	Ericsson		Rel-13	LTE_MTCe2_L1-Core	one week email discussion planned for completion of this outgoing LS
R2-153969	Reply LS on C-IoT/MTC data transmission targets for security-related procedures (to: SA3; cc: GERAN1, GERAN2, RAN1; contact: Vodafone)	SA3	GERAN1, GERAN2, RAN1	Vodafone	R2-152017 = S3-151418	Rel-13		
R2-153973	Response LS on Paging Optimization considering supported frequency bands (to: RAN3, SA2; cc: -; contact: Huawei)	RAN3, SA2	-	Huawei	R2-152010 = R3-150889	Rel-13	TEI13	
R2-153983	LS on gap handling for sidelink discovery (to: RAN4; cc: -; contact: Qualcomm)	RAN4	-	Qualcomm		Rel-13	LTE_eD2D_Prox-Core	result of one week email discussion [91#07][LTE/eD2D]

Summary:

In total 21 outgoing LSs of RAN2 #91:
4 on UTRA, 16 on LTE/E-UTRA and 1 on joint aspects.

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Annex E:
List of agreed CRs for RAN #69

- Overview of 52 agreed and 0 technically endorsed RAN2 CRs submitted to RAN #69 (Phoenix, USA): see also RP-151126:

spec	REL-8	REL-9	REL-10	REL-11	REL-12	REL-13	CRs	specs	rapporteur	email
25.302	0	0	0	0	0	1	**1**	**1**	David Bhatoolaul (ALU)	david.bhatoolaul@alcatel-lucent.com
25.306	0	0	0	0	1	0	**1**	**1**	Martin van der Zee (Ericsson)	martin.van.der.zee@ericsson.com
25.321	0	0	0	0	0	1	**1**	**1**	Alexander Sayenko (NSN)	alexander.sayenko@nokia.com
25.331	0	0	0	0	3	1	**4**	**2**	Mark Curran (Ericsson)/ASN.1: Xudong Yang (Huawei)	mark.curran@ericsson.com yangxudong@huawei.com
36.300	0	0	0	0	1	0+1*	**1+1***	**2**	Benoist Sebire (NSN)	benoist.sebire@nokia.com
36.302	0	0	0	0	1	0	**1**	**1**	Seau Sian Lim (Alcatel-Lucent)	seaulim@alcatel-lucent.com
36.304	0	0	0	0	1	0	**1**	**1**	Jarkko Koskela (Nokia)	jarkko.t.koskela@nokia.com
36.306	0	0	2	3	8+2*	0	**13+2***	**3**	Ravi Kuchibhotla (Motorola Mobility)	ravi.kuchibhotla@motorola.com
36.321	0	0	0	0	4	0	**4**	**1**	Magnus Stattin (Ericsson)	magnus.stattin@ericsson.com
36.322	0	0	0	0	1	0	**1**	**1**	Toru Uchino (NTT DoCoMo)	tooru.uchino.fv@nttdocomo.com
36.331	0	0	3	5	16+3*	0	**24+3***	**3**	Himke van der Velde (Samsung)	himke.vandervelde@samsung.com
UTRA	**0**	**0**	**0**	**0**	**4**	**3**	**7**	**5**		
LTE	**0**	**0**	**5**	**8**	**32+5***	**0+1***	**45+6***	**12**		
total	**0**	**0**	**5**	**8**	**36+5***	**3+1***	**52+6***	**17**		

Note: No CRs from REL-4 to REL-7

*: xx company CRs

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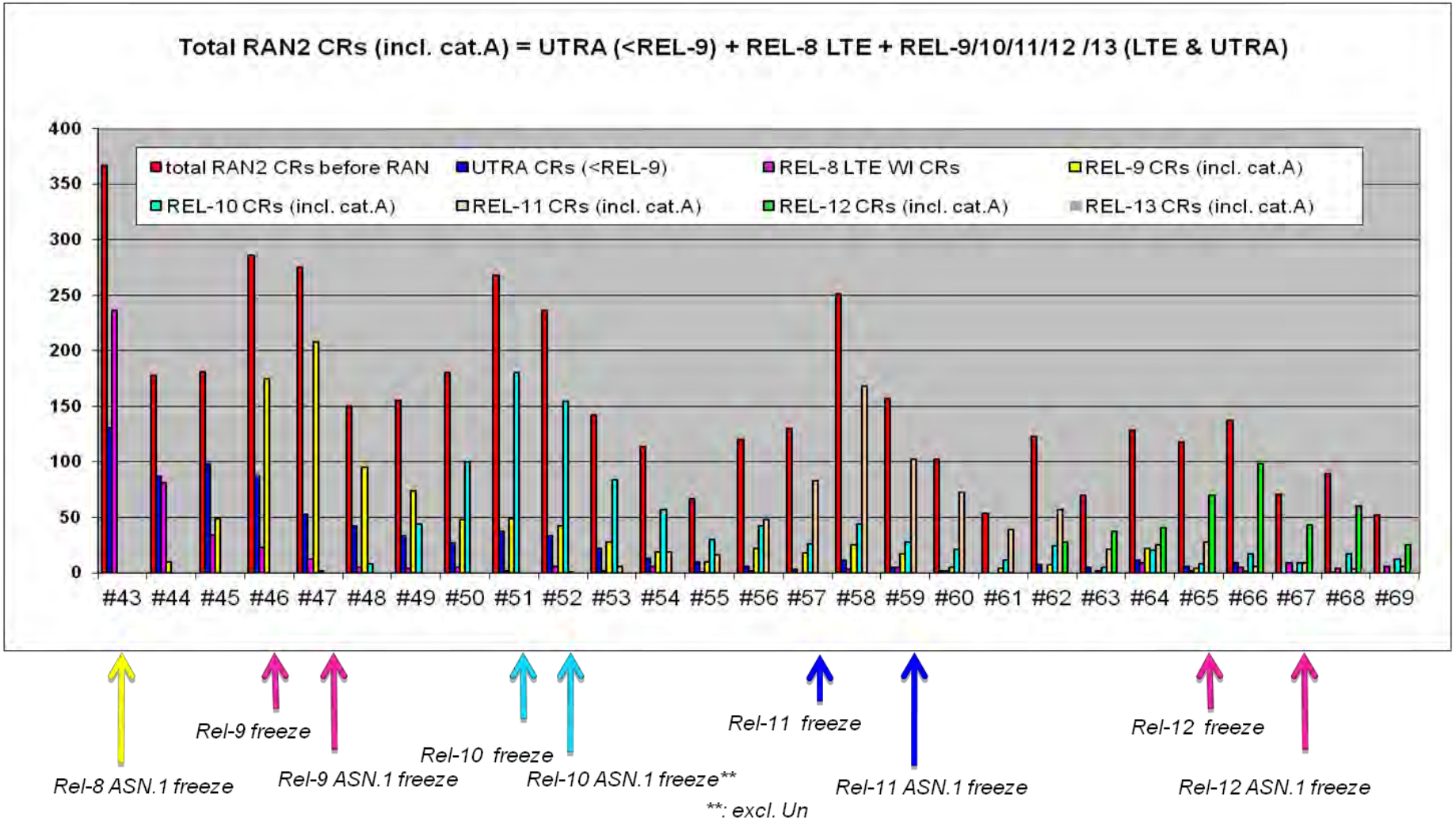


Figure E-1: RAN2 CRs submitted to the previous and the following RAN plenary #69

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The following table includes the RAN2 CRs submitted to RAN #69 in Phoenix, USA:

Spec	CR #	rev	cat	REL	RAN2 Tdoc	Title	SI/WI	RAN2 Source	RAN2 status	RAN Tdoc	RAN status	Remarks
36.306	0285	-	F	Rel-10	R2-153064	Remove support of additionalSpectrumEmissionPCell	LTE_CA-Core	HTC Corporation	agreed	RP-151438	approved	
36.306	0286	-	A	Rel-11	R2-153065	Remove support of additionalSpectrumEmissionPCell	LTE_CA-Core	HTC Corporation	agreed	RP-151438	approved	
36.306	0287	-	A	Rel-12	R2-153066	Remove support of additionalSpectrumEmissionPCell	LTE_CA-Core	HTC Corporation	agreed	RP-151438	approved	
25.321	0810	-	B	Rel-13	R2-153075	Introduction of the Multiflow 3F-4C configuration	HSDPA_MFTX_enh-Core	Nokia Networks	agreed	RP-151444	approved	
36.306	0288	-	F	Rel-12	R2-153144	Capturing PCell support for FDD-TDD CA	LTE_CA_TDD_FDD-Core	NTT DOCOMO, INC., Qualcomm Incorporated	agreed	RP-151442	approved	
36.322	0108	-	F	Rel-12	R2-153230	Corrections for STCH in 36.322	LTE_D2D_Prox-Core	Huawei, HiSilicon	agreed	RP-151441	approved	
36.331	1866	-	F	Rel-12	R2-153353	Correction on UE band combinition capability	TEI12	Huawei, HiSilicon	agreed	RP-151443	approved	
36.331	1867	-	F	Rel-10	R2-153354	Correction on Restriction to CA capability signalling	LTE_CA-Core	Huawei, HiSilicon	agreed	RP-151438	approved	
36.331	1868	-	A	Rel-11	R2-153355	Correction on Restriction to CA capability signalling	LTE_CA-Core	Huawei, HiSilicon	agreed	RP-151438	approved	
36.331	1869	-	A	Rel-12	R2-153356	Correction on Restriction to CA capability signalling	LTE_CA-Core	Huawei, HiSilicon	agreed	RP-151438	approved	
36.306	0292	-	F	Rel-12	R2-153567	Clarification of the maximum number of bits of a single DL-SCH transport block for DL Category 16	LTE_CA-Core, TEI12, LTE_SC_enh_L1-Core	NTT DOCOMO, INC., Huawei, Samsung, Intel Corporation	agreed	RP-151442	approved	
36.306	0293	-	F	Rel-12	R2-153579	Capturing mandatory/optional features of Rel-12 UEs	LTE_SC_enh_L1-Core, LTE_UTRA_IncMon-Core	NTT DOCOMO, INC., Ericsson, Huawei	agreed	RP-151442	approved	
25.331	5785	-	D	Rel-12	R2-153591	Rapporteur corrections for 25.331 RRC specification	TEI12	Ericsson	agreed	RP-151443	approved	
36.331	1884	-	F	Rel-12	R2-153604	The support of UL64QAM	TEI12	Huawei, HiSilicon, CMCC, Qualcomm Incorporated	agreed	RP-151443	approved	
36.331	1889	-	F	Rel-12	R2-153629	Small corrections concerning RadioResourceConfig	LTE_CA-Core, LTE_SC_enh_dualC-Core	Samsung, Intel	agreed	RP-151442	approved	
36.331	1900	-	F	Rel-12	R2-153708	Sidelink discovery related corrections	LTE_D2D_Prox-Core	Nokia Networks	agreed	RP-151441	approved	
36.321	0799	1	F	Rel-12	R2-153862	Correction on Type 2 PH reporting	TEI12, LTE_CA-Core	Intel Corporation	agreed	RP-151438	approved	
36.321	0795	1	F	Rel-12	R2-153863	Corrections for reporting and cancellation of SL BSR	LTE_D2D_Prox-Core	Huawei, HiSilicon	agreed	RP-151441	approved	
36.321	0785	1	F	Rel-12	R2-153864	Corrections to Sidelink in MAC	LTE_D2D_Prox-Core	Intel Corporation	agreed	RP-151441	approved	
36.321	0790	1	F	Rel-12	R2-153865	Miscellaneous corrections on Sidelink	LTE_D2D_Prox-Core	ASUSTeK	agreed	RP-151441	approved	
36.302	0061	1	F	Rel-12	R2-153869	TS36.302 rapporteur's cleanup	TEI12	Alcatel-Lucent	agreed	RP-151443	approved	
25.331	5786	-	F	Rel-12	R2-153874	Clarification of Beacon RSSI Encoding	UTRA_LTE_WLAN_interw-Core	Qualcomm Incoporated	agreed	RP-151440	approved	
36.331	1905	2	F	Rel-12	R2-153875	Clarification of Beacon RSSI Encoding	UTRA_LTE_WLAN_interw-Core	Qualcomm Incoporated	agreed	RP-151440	approved	
36.331	1913	-	C	Rel-11	R2-153879	CR for IDC signalling enhancement for UL CA	SPIA_IDC_LTE-Core	Ericsson, Nokia Networks, NTT	agreed	RP-151439	approved	

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Spec	CR #	rev	cat	REL	RAN2 Tdoc	Title	SI/WI	RAN2 Source	RAN2 status	RAN Tdoc	RAN status	Remarks
								DOCOMO, INC., Samsung				
36.331	1911	1	A	Rel-12	R2-153880	CR for IDC signalling enhancement for UL CA	SPIA_IDC_LTE-Core	Ericsson, Nokia Networks, NTT DOCOMO, INC., Samsung	agreed	RP-151439	approved	
25.306	0488	1	F	Rel-12	R2-153898	Increased UE carrier monitoring E-UTRA support mandatory	LTE_UTRA_IncMon-Core	Ericsson	agreed	RP-151440	approved	
25.302	0237	2	B	Rel-13	R2-153900	Introduction of the Multiflow 3F-4C configuration	HSDPA_MFTX_enh-Core	Nokia Networks	agreed	RP-151444	approved	
25.331	5776	2	B	Rel-13	R2-153901	Introduction of the Multiflow 3F-4C configuration	HSDPA_MFTX_enh-Core	Nokia Networks	agreed	RP-151444	approved	
25.331	5780	1	F	Rel-12	R2-153905	Clarification for the inter-frequency measurement results on RACH with extended cell ID values	LTE_UTRA_IncMon-Core	Nokia Networks, Huawei, HiSilicon	agreed	RP-151440	approved	
36.331	1880	2	F	Rel-12	R2-153917	Clarification on cell selection sequence upon leaving RRC_CONNECTED	UTRA_LTE_WLAN_interw-Core	HTC Corporation	agreed	RP-151440	approved	
36.306	0297	-	C	Rel-11	R2-153918	CR for IDC signalling enhancement for UL CA	SPIA_IDC_LTE-Core	Ericsson, Nokia Networks, NTT DOCOMO, INC., Samsung	agreed	RP-151439	approved	
36.306	0298	-	A	Rel-12	R2-153919	CR for IDC signalling enhancement for UL CA	SPIA_IDC_LTE-Core	Ericsson, Nokia Networks, NTT DOCOMO, INC., Samsung	agreed	RP-151439	approved	
36.331	1896	1	F	Rel-10	R2-153923	Correction to additionalSpectrumEmission - Option 1	LTE_CA-Core	HTC Corporation	agreed	RP-151438	approved	
36.331	1907	-	A	Rel-11	R2-153924	Correction to additionalSpectrumEmission - Option 1	LTE_CA-Core	HTC Corporation	agreed	RP-151438	approved	
36.331	1908	-	A	Rel-12	R2-153925	Correction to additionalSpectrumEmission - Option 1	LTE_CA-Core	HTC Corporation	agreed	RP-151438	approved	
36.331	1878	1	F	Rel-11	R2-153929	Correction on the reference of EPDCCH	LTE_enh_dl_ctrl-Core	Huawei, HiSilicon, China Telecom	agreed	RP-151439	approved	
36.331	1879	1	A	Rel-12	R2-153930	Correction on the reference of EPDCCH	LTE_enh_dl_ctrl-Core	Huawei, HiSilicon, China Telecom	agreed	RP-151439	approved	
36.331	1891	1	F	Rel-12	R2-153933	Introducing general handling and guidelines concerning critical extensions within a release	TEI12, LTE_D2D_Prox-Core	Samsung	agreed	RP-151441	approved	
36.300	0786	1	F	Rel-12	R2-153934	Sidelink terminology alignment in TS 36.300	LTE_D2D_Prox-Core	Intel Corporation, Qualcomm Incorporated, LG Electronics Inc.	agreed	RP-151441	approved	REL-13 cat.A CR for REL-12 cat.F CR R2-153934 is provided in company CR RP-151520
36.304	0273	1	F	Rel-12	R2-153935	Sidelink terminology alignment in TS 36.304	LTE_D2D_Prox-Core	Intel Corporation, Qualcomm Incorporated, LG Electronics Inc.	agreed	RP-151441	approved	
36.306	0289	1	F	Rel-12	R2-153936	Corrections on UE sidelink capabilities in TS 36.306	LTE_D2D_Prox-Core	Huawei, HiSilicon	agreed	RP-151441	approved	

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Spec	CR #	rev	cat	REL	RAN2 Tdoc	Title	SI/WI	RAN2 Source	RAN2 status	RAN Tdoc	RAN status	Remarks
36.331	1909	1	F	Rel-12	R2-153960	Applicability of longCodeState1XRTT for 1xRTT IRAT ANR	TEI12	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	agreed	RP-151443	approved	
36.331	1912	1	F	Rel-12	R2-153961	Sidelink terminology alignment in TS 36.331	LTE_D2D_Prox-Core	Intel Corporation, Qualcomm Incorporated, LG Electronics Inc.	agreed	RP-151441	approved	
36.331	1906	2	F	Rel-12	R2-153962	Clarification for NAICS capability signalling	LTE_NAICS-Core	Nokia Networks	agreed	RP-151442	approved	
36.331	1861	2	C	Rel-12	R2-153974	Additional MIMO/CSI capability for intra-band contiguous CA	LTE_CA-Core, TEI12	Intel Corporation, NTT DOCOMO, Samsung	agreed	RP-151467	approved	
36.306	0290	2	C	Rel-12	R2-153975	Additional MIMO/CSI capability for intra-band contiguous CA	LTE_CA-Core, TEI12	Intel Corporation, NTT DOCOMO, Samsung	agreed	RP-151467	approved	
36.331	1885	2	C	Rel-10	R2-153976	Signalling for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	agreed	RP-151466	approved	
36.331	1886	2	A	Rel-11	R2-153977	Signalling for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	agreed	RP-151466	approved	
36.331	1887	2	C	Rel-12	R2-153978	Signalling for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	agreed	RP-151466	approved	
36.306	0294	2	C	Rel-10	R2-153979	Capability for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	agreed	RP-151466	approved	
36.306	0295	2	A	Rel-11	R2-153980	Capability for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	agreed	RP-151466	revised	cover sheet wrongly shows rev 1
36.306	0296	2	C	Rel-12	R2-153981	Capability for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	agreed	RP-151466	revised	cover sheet wrongly shows rev 1
36.331	1914	-	C	Rel-12	-	Allowing NAICS with TM10	LTE_NAICS-Core		-	RP-151458	revised	company CR; related to RAN4 agreement to allow NAICS operation with TM10 in a specific condition; CR was not provided to RAN2

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Spec	CR #	rev	cat	REL	RAN2 Tdoc	Title	SI/WI	RAN2 Source	RAN2 status	RAN Tdoc	RAN status	Remarks
												#91; related to RP-151348 and RP-151349
36.300	0792	-	A	Rel-13	-	Sidelink terminology alignment in TS 36.300	LTE_D2D_Prox-Core		-	RP-151520	approved	company CR to provide missing REL-13 cat.A CR to the REL-12 cat.F 36.300 CR in R2-1533934 of RP-151441
36.331	1914	1	C	Rel-12	-	Allowing NAICS with TM10	LTE_NAICS-Core		-	RP-151594	revised	company CR; related to RAN4 agreement to allow NAICS operation with TM10 in a specific condition; CR was not provided to RAN2 #91; related to RP-151348 and RP-151349; revision of RP-151458
36.306	0295	3	A	Rel-11	-	Capability for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10		-	RP-151596	approved	company CR to revise R2-153980 of RP-151466 to correct rev to rev 3
36.306	0296	3	C	Rel-12	-	Capability for 4-layer MIMO with TM3 and TM4	LTE-L23, TEI10		-	RP-151597	approved	company CR to revise R2-153981 of RP-151466 to correct rev to rev 3
36.331	1914	2	C	Rel-12	-	Allowing NAICS with TM10	LTE_NAICS-Core		-	RP-151625	approved	company CR; related to RAN4 agreement to allow NAICS operation with TM10 in a specific condition; CR was not provided to RAN2 #91; related to RP-151348 and RP-151349; revision of RP-151594;

- Rows highlighted in yellow indicate company contributions treated at RAN #69 for which no Tdoc was submitted to RAN2 #91.
- The table above has 54 entries (rows excl. header row) of which 58 CRs were approved at RAN #69:
  - 52 CRs agreed by RAN2 of which then 50 CRs were approved by RAN #69, 0 were postponed and 2 CR was revised in company contributions.
  - 0 CRs were technically endorsed by RAN2 and 0 CRs were postponed at RAN #69.
  - 6 company contributions (highlighted in yellow) of which then 4 CRs were approved and 0 CRs were postponed at RAN #69.

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So finally: Approved RAN2 CRs after RAN #69: 54.

spec	REL-8	REL-9	REL-10	REL-11	REL-12	REL-13	CRs	specs	rapporteur	email
25.302	0	0	0	0	0	1	**1**	**1**	David Bhatoolaul (ALU)	david.bhatoolaul@alcatel-lucent.com
25.306	0	0	0	0	1	0	**1**	**1**	Martin van der Zee (Ericsson)	martin.van.der.zee@ericsson.com
25.321	0	0	0	0	0	1	**1**	**1**	Alexander Sayenko (NSN)	alexander.sayenko@nokia.com
25.331	0	0	0	0	3	1	**4**	**2**	Mark Curran (Ericsson)/ASN.1: Xudong Yang (Huawei)	mark.curran@ericsson.com yangxudong@huawei.com
36.300	0	0	0	0	1	0+1*	**1+1***	**2**	Benoist Sebire (NSN)	benoist.sebire@nokia.com
36.302	0	0	0	0	1	0	**1**	**1**	Seau Sian Lim (Alcatel-Lucent)	seaulim@alcatel-lucent.com
36.304	0	0	0	0	1	0	**1**	**1**	Jarkko Koskela (Nokia)	jarkko.t.koskela@nokia.com
36.306	0	0	2	3	6+2*	0	**11+2***	**3**	Ravi Kuchibhotla (Motorola Mobility)	ravi.kuchibhotla@motorola.com
36.321	0	0	0	0	4	0	**4**	**1**	Magnus Stattin (Ericsson)	magnus.stattin@ericsson.com
36.322	0	0	0	0	1	0	**1**	**1**	Toru Uchino (NTT DoCoMo)	tooru.uchino.fv@nttdocomo.com
36.331	0	0	3	5	16+1*	0	**24+1***	**3**	Himke van der Velde (Samsung)	himke.vandervelde@samsung.com
UTRA	**0**	**0**	**0**	**0**	**4**	**3**	**7**	**5**		
LTE	**0**	**0**	**5**	**8**	**32+3***	**0+1***	**45+4***	**12**		
total	**0**	**0**	**5**	**8**	**36+3***	**3+1***	**52+4***	**17**		

Note: No CRs from REL-4 to REL-7

*: 4 company CRs

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Annex F:
RAN WG2 meeting #91 post processing

Email discussions/approvals

Rapporteur companies are requested to kick-off email discussions as soon as possible via the RAN2 email reflector. Important: In the beginning of the subject of each email the corresponding identifier [...] of the email discussion has to be used in order to allow sorting of the different email discussions.

Email discussions with finalisation by Thu 03.09.2015 midnight Pacific time, i.e. Fri 04.09.2015 9am CEST:

[91#00][UMTS/IncMon] Inter-frequency measurement results on RACH (Nokia Networks)
- Review CR in R2-153306

=> Intended outcome: Agreed 25.331 CR to RAN plenary in R2-153905 CR 5780 R1

conclusion: Email discussion was kicked off by Sayenko, Alexander (Nokia Networks) on 01.09.2015.
25.331 CR in R2-153905 was agreed on 04.09.2015.

[91#01][LTE/WiFi] Clarification on cell selection sequence (HTC)
- Update Consequences if not approved and Inter-operability of the CR in R2-153856

=> Intended outcome: Agreed CR to RAN plenary in R2-153917 CR1880 R2

conclusion: Email discussion was kicked off by Eric Chen (HTC) on 01.09.2015.
36.331 CR in R2-153917 was agreed on 04.09.2015.

[91#02][LTE/CA] Additional MIMO/CSI capability for contiguous intra-band (Intel)
- Final check and clarification that the signaling applies to TM9/10 intra-band contiguous
- Based on R2-153942 and R2-153943

=> Intended outcome: Agreed 36.306 and 36.331 CRs to plenary

conclusion: Email discussion was kicked off by Youn Hyoung Heo (Intel) on 31.08.2015.
36.306 CR in R2-153975 and 36.331 CR in R2-153974 were agreed on 05.09.2015.

[91#03][LTE/CA] Support for 4 layer MIMO with TM3 and TM4 (Nokia Networks)
- Careful check of CRs R2-153951 to R2-153956

=> Intended outcome: Agreed 36.306 and 36.331 CRs to plenary

conclusion: Email discussion was kicked off by Tero Henttonen (Nokia Networks) on 31.08.2015.
36.306 CRs in R2-153979, R2-153980 and R2-153981 and 36.331 CRs in R2-153976, R2-153977 and R2-153978 were agreed on 08.09.2015.

[91#04][LTE/IDC] IDC signalling enhancement for UL CA (Ericsson)
- Final check of CR in R2-153872
- Provide additional CRs for Rel-11

=> Intended outcome: Agreed Rel-11 and Rel-12 CRs for 36.331 and 36.306 to RAN plenary

conclusion: Email discussion was kicked off by Riikka Susitaival (Ericsson) on 31.08.2015.
36.306 CRs in R2-153918 & R2-153919and 36.331 CR in R2-153879 & R2-153880 were agreed on 05.09.2015.

[91#05][LTE/ProSe] Terminology alignment (Intel)
- Final check of CR in R2-153958

=> Intended outcome: Agreed 36.331 CR to plenary in R2-153961 CR1912 R1

conclusion: Email discussion was kicked off by Youn Hyoung Heo (Intel) on 31.08.2015.
36.331 CR in R2-153961 was agreed on 08.09.2015.

[91#06][LTE/MDT] TR 36.880 (CMCC)

=> Intended outcome: Agreed TR 36.880 v0.3.2 in R2-153971 for 1-step approval at RAN plenary

conclusion: Email discussion was kicked off by Hu Nan (China Mobile) on 01.09.2015.

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TR 36.880 v0.3.2 in R2-153971 and TR 36.880 v0.4.0 in R2-153982 were agreed on 07.09.2015.

[91#07][LTE/eD2D] LS to RAN4 (QC)

- Agree on LS to RAN4 notifying them of RAN2 agreements related to gaps for inter-frequency/inter-PLMN discovery

=> Intended outcome: Approved LS to RAN4

conclusion: Email discussion was kicked off by Sudhir Baghel (Qualcomm) on 01.09.2015. The LS to RAN4 in R2-153983 was agreed on 05.09.2015.

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Email discussions with finalisation by Thu 10.09.2015 midnight Pacific time, i.e. Fri 11.09.2015 9am CEST:

[91#10][LTE/LAA] Running stage-2 CR (Huawei)
- Capture agreements from this meeting

=> Intended outcome: Technically endorsed running 36.300 CR in R2-153907 CR0787 R1
conclusion: Email discussion was kicked off by Hao Bi (Huawei) on 01.09.2015.
36.300 CR in R2-153907 was endorsed on 15.09.2015.

[91#11][LTE/CAe] Running 36.321 CR (Ericsson)
- Align with RRC CR

=> Intended outcome: Technically endorsed running 36.321 CR in R2-153964
conclusion: Email discussion was kicked off by Mattias Bergström A (Ericsson) on 31.08.2015.
36.321 CR in R2-153964 was endorsed on 11.09.2015.

[91#12][LTE/CAe] Running 36.331 CR (Nokia Networks)
- Align with MAC CR

=> Intended outcome: Technically endorsed running 36.331 CR in R2-153946
conclusion: Email discussion was kicked off by Jarkko T. Koskela (Nokia Networks) on 31.08.2015.
36.331 CR in R2-153946 was endorsed on 11.09.2015.

[91#13][LTE/SC-PTM] Running stage-2 CR (Huawei)
- Capture the agreements from this meeting

=> Intended outcome: Technically endorsed running stage-2 CR
conclusion: Email discussion was kicked off by david lecompte (Huawei) on 31.08.2015.
36.300 CR in R2-153889 was endorsed on 25.09.2015.

[91#14][LTE/MTC] Running stage-2 CR (Ericsson)

=> Intended outcome: Technically endorsed running 36.300 CR in R2-153967; an LS to RAN1 with the attached running CR in R2-153968
conclusion: Email discussion was kicked off by Emre Yavuz (Ericsson) on 04.09.2015.
36.300 CR in R2-153967 was endorsed and the LS in R2-153968 was agreed on 15.09.2015.

[91#15][LTE/WiFi] Running 36.300 CR (Intel)
- Incorporate the agreements of this meeting in the latest endorsed CR
- Clarify the figure
- Incorporate RAN3 CR into this CR

=> Intended outcome: Technically endorsed 36.300 CR in R2-153972
conclusion: Email discussion was kicked off by Sasha Sirotkin (Intel) on 04.09.2015.
36.300 CR in R2-153972 was endorsed on 24.09.2015.

[91#16][LTE/eD2D] Running stage 2 CRs (QC)
- Capture agreements on eD2D up to RAN2#91

=> Intended outcome: Technically Endorsed 36.300 CR
conclusion: Email discussion was kicked off by Sudhir Baghel (Qualcomm) on 01.09.2015.
36.300 CR in R2-153890 was endorsed on 11.09.2015.

[91#17][LTE/Latency] Update of TR 36.881 (Ericsson)
- Capture agreements from this meeting

=> Intended outcome: Agreed update of TR 36.881 v0.2.1 in R2-153910 (not for approval at RAN)
conclusion: Email discussion was kicked off by Henrik Enbuske (Ericsson) on 02.09.2015.
TR 36.881 v0.2.1 in R2-153910 and TR 36.881 v0.3.0 in R2-153984 were agreed on 16.09.2015.

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Email discussions with finalisation by Thu 24.09.2015 midnight Pacific time, i.e. Fri 25.09.2015 9am CET:

[91#20][LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls (Nokia Networks)
- Discuss in which message to include the indication
=> Intended outcome: CRs to the next meeting
conclusion: Email discussion was kicked off by Tero Henttonen (Nokia Networks) on 15.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154895.

[91#21][LTE/CAe] Capability signalling enhancements (Nokia Networks)
- Identify feasible solutions to reduce capability signalling
- Ensure backwards compatibility
=> Intended outcome: Email discussion report to the next meeting
=> Intended outcome: LS to RAN4 if needed
conclusion: Email discussion was kicked off by Tero Henttonen (Nokia Networks) on 15.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154894.

[91#22][LTE/SC-PTM] Scheduling pattern, DRX and Change Notification (Huawei)
- Discuss whether SC-PTM configuration also comprises the scheduling period, scheduling window and start offset which indicates the subframes where UE should monitor the associated Group-RNTIs on PDCCH.
- Discuss whether the pattern is per service
- Discuss whether more flexible schemes should be considered (e.g. period extends when valid PDCCH assignment detected…)
- Discuss how change notification is provided
=> Intended outcome: Email discussion report to next meeting
conclusion: Email discussion was kicked off by Jeff Gao (Huawei) on 14.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154195.

[91#23][LTE/SC-PTM] Service continuity (Huawei)
- Discuss suitable means to realize service continuity
- Consider overhead in broadcast and e.g. update frequency
=> Intended outcome: Email discussion report to the next meeting
conclusion: Email discussion was kicked off by David Lecompte (Huawei) on 16.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154196.

[91#24][LTE/MTC] Timer handling for extended coverage (Ericsson)
- Discuss how MAC and RRC timers relevant for RA and connection establishment need to be extended for UEs in extended coverage.
=> Intended outcome: Email discussion summary to the next meeting
conclusion: Email discussion was kicked off by Emre Yavuz (Ericsson) on 17.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154870.

[91#25][LTE/MTC] Mobility Support (MediaTek)
- Discuss mobility support also taking into account recent input from RAN4
- Can address IDLE and CONNECTED mode
=> Intended outcome: Email discussion report to next meeting
conclusion: Email discussion was kicked off by Johan Johansson (Media Tek) on 24.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154888.

[91#26][LTE/WiFi] Radio Link Monitoring for WLAN aggregation (Huawei)
=> Intended outcome: Email discussion summary to the next meeting
conclusion: Email discussion was kicked off by David Lecompte (Huawei) on 17.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154868.

[91#27][LTE/WiFi] RRM Measurement Framework (Intel)
=> Intended outcome: Email discussion summary to the next meeting
conclusion: Email discussion was kicked off by Sasha Sirotkin (Intel) on 16.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154395.

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[91#28][LTE/Load Balancing] Redistribution Schemes (ZTE)
- Investigate advantages and benefits of schemes that can redistribute IDLE UEs (continuous randomization and one-shot mechanism)
- Do not discuss existing dedicated reselection priorities provided during RRC connection release
- Aim to converge to one solution

=> Intended outcome: Email discussion report and possibly draft CRs to next meeting
conclusion: Email discussion was kicked off by Zhongsa Du (ZTE) on 02.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154440.

[91#29][LTE/Latency] Evaluation results (Ericsson)
- All companies may provide comprehensive TPs with their assumptions, results and conclusions to the email discussion. Those parts can then be included in one big TP by the rapporteur. That TP will then be provided as input to the next meeting. Possibly, a conclusion for those results should be added

=> Intended outcome: TP with simulation assumptions, results and conclusions
conclusion: Email discussion was kicked off by Henrik Enbuske (Ericsson) on 03.09.2015.
Email discussion results are provided to RAN2 #91bis in R2-154743 and R2-154744.

[91#30][LTE/DCe] SFN/subframe offset reporting (NTT DOCOMO)
- Related to R2-153175

=> Intended outcome: Email discussion report to next meeting
conclusion: Email discussion was kicked off by Toru Uchino (NTT DOCOMO) on 11.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154398.

[91#31][LTE/D2D] Relay selection and reselection (Qualcomm)
- Define relay selection/reselection terminology
- Define the detailed criteria to select a new relay and whether/how to perform the ranking of relays

=> Intended outcome: Sept. 11: Company opinions provided
=> Intended outcome: Sept. 18: Rapporteur provides way forward
conclusion: Email discussion was kicked off by Sudhir Baghel (Qualcomm) on 09.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154796.

[91#32][LTE/eDRX] eDRX and H-SFN range (Intel)
- Agree on an acceptable eDRX range and values for idle mode
- Agree on the range of H-SFN
- Discuss how to handle system information update
- Deadline one week before contribution deadline

=> Intended outcome: Email discussion report to next meeting
conclusion: Email discussion was kicked off by Marta M Tarradell (Intel) on 11.09.2015.
Email discussion result is provided to RAN2 #91bis in R2-154294.

CRs from other WGs to be agreed/reviewed by RAN2 before RAN #69:

No CRs received from other WGs

Preparation of status reports for SIs and WIs under RAN2 leadership for RAN #69:

Rapporteurs were asked to make draft status reports available for review on the RAN2 reflector (without Tdoc number) as soon as possible after RAN2 #91. Below the results of RAN #69 are summarized as percentage complete/target completion date/status report.

- REL-13 SI: Study on further enhancements of Minimization of Drive Tests (MDT) for E-UTRAN, rapporteur: Hu, Nan (CMCC)
  acronym: FS_LTE_eMDT2, SID: RP-150472 at RAN #67, TR36.880
  History: RAN #67: new/Sep.15/-

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RAN #68: 70%/Sep.15/RP-150806
now: RAN #69: 100%/Sep.15/RP-151181

- REL-13 SI: Study on Latency reduction techniques for LTE, rapporteur: Enbuske, Henrik (Ericsson)
  acronym: FS_LTE_LATRED, SID: RP-150465 at RAN #67, TR 36.881
  History: RAN #67: new/June 16/-
  RAN #68: 10%/June 16/RP-150780
  now: RAN #69: 50%/June 16/RP-151286

- REL-13 WI: Support of EVS over UTRAN CS, rapporteur: Francesco PICA (Qualcomm)
  acronym: EVSoCS-UTRAN-Core, WID: RP-142282 at RAN #66
  History: RAN #66: new/Sept 15/-
  RAN #67: 10%/Sept 15/ RP-150128
  RAN #68: 25%/Sept 15/ RP-150759
  Now: RAN #69: 50%/Dec 15/ RP-151282

- REL-13 WI: Enhanced LTE Device to Device Proximity Services, rapporteur: Shailesh Patil (Qualcomm)
  acronym: LTE_eD2D_Prox-Core, WID: RP-142311 at RAN #66; revised in RP-150441 at RAN#67
  History: RAN #66: new/Dec 15/-
  RAN #67: 0%/Dec 15/ RP-150095
  RAN #68: 40%/Dec 15/ RP-150795
  Now: RAN #69: 55%/Dec 15/ RP-151337

- REL-13 WI: Core part: Multiflow Enhancements for UTRA, rapporteur: Sayenko, Alexander (Nokia Networks)
  acronym: HSDPA_MFTX_enh-Core, WID: RP-150288 at RAN #67, revised in RP-151021 at RAN#68
  History: RAN #67: new/Sep.15/-
  RAN #68: 80%/Sep.15/RP-150827
  now: RAN #69: 100%/Sep.15/RP-151302

- REL-13 WI: Core part: Dual Connectivity enhancements for LTE, rapporteur: Uchino, Toru (NTT DOCOMO)
  acronym: LTE_dualC_enh-Core, WID: RP-150490 at RAN #67
  History: RAN #67: new/Dec.15/-
  RAN #68: 25%/Dec.15/RP-150744
  now: RAN #69: 55%/Dec.15/RP-151214

- REL-13 WI: Core part: Multicarrier Load Distribution of UEs in LTE, rapporteur: DU, Zhongda (ZTE)
  acronym: LTE_MC_load-Core, WID: RP-150491 at RAN #67, revised in RP-150611 at RAN#68; revised in RP-151206 at RAN#69
  History: RAN #67: new/Dec.15/-
  RAN #68: 40%/Dec.15/RP-150610
  now: RAN #69: 50%/Dec.15/RP-151190

- REL-13 WI: Core part: RAN enhancements for extended DRX in LTE, rapporteur: Vajapeyam, Madhavan (Qualcomm)
  acronym: LTE_extDRX-Core, WID: RP-150493 at RAN #67; revised in RP-151339 at RAN#69
  History: RAN #67: new/Dec.15/-
  RAN #68: 20%/Dec.15/RP-150798
  now: RAN #69: 45%/Dec.15/RP-151338

- REL-13 WI: Core part: LTE-WLAN Radio Level Integration and Interworking Enhancement, rapporteur: Sirotkin, Sasha (Intel)
  acronym: LTE_WLAN_radio-Core, WID: RP-150510 at RAN #67, revised in RP-151114 at RAN#68
  History: RAN #67: new/Dec.15/-
  RAN #68: 30%/Dec.15/RP-151081
  now: RAN #69: 40%/Dec.15/RP-151319

- REL-13 WI: Core part: RAN aspects of Application specific Congestion control for Data Communication, rapporteur: Youngdae LEE (LG Electronics)
  acronym: ACDC-RAN-Core, WID: RP-150512 at RAN #67
  History: RAN #67: new/Dec.15/-

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RAN #68: 25%/Dec.15/RP-150661
now: RAN #69: 70%/Dec.15/RP-151275

- REL-13 WI: Support of single-cell point-to-multipoint transmission in LTE, rapporteur: Jeff GAO (Huawei)
  acronym: LTE_SC_PTM, WID: RP-151110 at RAN #68
  History: RAN #68: new/Dec 15/-
  now: RAN #69:30%/Dec 15/RP-151237

- REL-13 WI: L2/L3 Downlink enhancements for UMTS, rapporteur: Jun Chen (Huawei)
  acronym: UTRA_EDL_L23, WID: RP-151043 at RAN #68; revised in RP-151249 at RAN#69
  History: RAN #68: new/June.15/-
  now: RAN #69: 35%/June.15/RP-151238

- REL-13 WI: Power saving enhancements for UMTS, rapporteur: Martin van der Zee (Ericsson)
  acronym: UTRA_SDATA_POWSAV, WID: RP-151092 at RAN #68; revised in RP-151292 at RAN#69
  History: RAN #68: new/March.15/-
  now: RAN #69: 25%/March.15/RP-151291

New SIs and WIs under RAN2 leadership for RAN #69:

- REL-13 WI: Dual Carrier HSUPA Enhancements for UTRAN CS, rapporteur: SAYENKO, Alexander (Nokia Networks)
  acronym: DC_HSUPA_CS-Core, WID: RP-151607 at RAN #69
  now: RAN #69: new/Dec 15/-

- REL-13 WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN, rapporteur: Hu, Nan (CMCC)
  acronym: LTE_eMDT2-Core, WID: RP-151611 at RAN #69
  now: RAN #69: new/Dec 15/-

- REL-13 WI: LTE-WLAN RAN Level Integration supporting legacy WLAN, rapporteur: Lim, Seau Sian (Alcatel-Lucent)
  acronym: LTE_WLAN_radio_legacy-Core, WID: RP-151615 at RAN #69
  now: RAN #69: new/Dec 15/-

- REL-13 WI: Indoor Positioning Enhancements for UTRA and LTE, rapporteur: Vogedes, Jerome (NextNav)
  acronym: UTRA_LTE_iPos_enh-Core, WID: RP-151624 at RAN #69
  now: RAN #69: new/June 16/-

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Annex G:
LTE UP session

On Monday and on Thursday of RAN2 #91, in parallel to the main LTE session, an LTE User Plane session was held in room Function Room 12 (Level 1 Floor) chaired by RAN2 vice-chairman SeungJune Yi (LG) addressing:

On Monday:
6.1.2 LTE: Rel-12 and earlier releases: User Plane
6.2.1.2 LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): User Plane
6.2.3.2 LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: User Plane
6.2.9.2 LTE Other Closed Rel-12 WIs: UP

On Tuesday:
7.9 LTE: Rel-13: WI: Dual Connectivity Enhancements

On Thursday:
7.9 LTE: Rel-13: WI: Dual Connectivity Enhancements
7.2.3 LTE: Rel-13: WI: CA enhancements: UP aspects

The corresponding report of this session R2-153861 was presented and agreed on Fri in the joint session and the contents is provided in this Annex G for convenience reasons.

6 LTE: Rel-12 and earlier releases

6.1.2 User Plane

The documents in this AI treated in the UP session.

R2-153045 Reply LS on Type 2 Power Headroom reporting (R1-154764; contact: Intel); RAN1; LS in; Rel-12; TEI12;
=> Noted

R2-153791 Correction on Type 2 PH reporting Intel Corporation CR 36.321 12.6.00799 F Rel-12 LTE_CA-Core
NOTE: TEI12 should be added in WI code since LTE-CA-Core was a REL-10 WI
- LG think we discussed the issue at the last meeting, and RAN2 agreed to change RAN1 specification. LG think MAC spec does not need to change. Ericsson think MAC assumes there was a transmission, so the intention of the CR is correct. MediaTek think the change is aligned with last agreement.
- Ericsson want to change “if needed” to “if available”. Intel think PCMAX is always available, so “if available” is misleading.
- Panasonic think the proposed change incurs change of UE implementation.

=> Remove “if needed”
=> Cover sheet should be updated.
=> With above changes, the CR0799r1 is agreed in R2-153862 (Intel).

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6.2 LTE: Rel-12

6.2.3 WI: LTE Device to Device Proximity Services - Radio Aspects

(LTE_D2D_Prox-Core, leading WG: RAN1, REL-12, started: Mar.14, **closed**: Mar.15, WID: RP-142043)

RAN1 TR 36.843 on D2D

6.2.3.2 User Plane

Documents in this agenda item treated in the UP session.

Including output of [90#26][LTE/ProSe] Rel-13 SL BSR trigger and cancellation (Huawei)

MAC

Reporting and cancellation of SL BSR

R2-153231 Report of email discussion on sidelink BSR Huawei, HiSilicon discussion
- Ericsson wonders why the issue is discussed in R12. Chairman clarified that the issue was triggered in R12, so it's ok to discuss it in R12.

Proposal1
=> The UE does not report empty SL BSR. All triggered sidelink BSRs shall be cancelled in case the MAC entity has no data available for transmission for any of the sidelink logical channels.
- AsusTek wants to limit the change to periodic and padding SL BSR. Huawei think the previous sentence covers the cancellation of regular SL BSR.

Proposal2
=> All triggered Regular Sidelink BSRs shall be cancelled (the triggered periodic SL BSR is not cancelled) in case the remaining configured SL grant(s) valid for this SC Period can accommodate all pending data available for transmission.

Release
- Huawei think the issue exists from R12, so want to apply the change from R12. Ericsson want to check whether there is a severe problem. LG, Coolpad is fine from R12.
=> Apply the change from R12.

R2-153397 Corrections for reporting and cancellation of SL BSR Huawei, HiSilicon CR 36.321 12.6.00789 F Rel-13 LTE_D2D_Prox-Core
=> CR is not agreed.

R2-153662 Corrections for reporting and cancellation of SL BSR Huawei, HiSilicon CR 36.321 12.6.00795 F Rel-12 LTE_D2D_Prox-Core
=> Tick the RAN box.
=> With above change, CR0795r1 is agreed in R2-153863 (Huawei).

R2-153325 Correction on Sidelink BSR transmission Innovative Technology Lab Co. CR 36.321 12.6.00787 F Rel-12 LTE_D2D_Prox-Core
=> CR is not agreed.

R2-153752 Clarification of cancellation of sidelink BSR Ericsson CR 36.321 12.6.00797 F Rel-12 LTE_D2D_Prox-Core
- AsusTek ask what is 0 byte SL grant. Ericsson clarified that there was a concern on whether data available for transmission = 0 byte can be accommodated into non-received SL grant. Nokia think the NOTE is not clear. LG think Huawei CR covers this case.

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=> CR is not agreed.

MAC others

R2-153272 Corrections to Sidelink in MACIntel Corporation CR 36.321 12.6.00785 F Rel-12 LTE_D2D_Prox-Core

Removing MAC CE
- ITL think removing MAC CE is not future proof. Intel want to make the spec clear, and keeping MAC CE makes confusion. ZTE supports for removing MAC CE. LG is fine with removing MAC CE. Ericsson, Huawei think there may be IOT issues with different releases. Intel think as long as the UE is standard compliant, there would be not IOT issues. ITL want to postpone the discussion to R13. Intel think it is the clean-up of R12 specification.

=> Remove SL MAC CE

Sidelink Control Layer-1 ID
- Nokia wonders whether the new terminology is used in RAN1 spec. Intel think there is misalignment between stage-2 and stage-3 spec. Nokia think SL Control L1 ID is a subset of Group Destination, and the change may not be just change of the name. Huawei want to keep the Group Destination.

=> Change stage-2 terminology, if needed.

N in SL BSR MAC CE
- ZTE think this change is not needed. ITL think it is useful clarification. Huawei think such clarification is not specified for PHR.

=> The change is not needed.

zero or one MAC SDU
- LG agree with the change.

=> Agree to change to one or more MAC SDU.

=> All other changes are agreed.

=> With above changes, the CR0785r1 is agreed in R2-153864 (Intel).

R2-153774 Corrections on Prose BSR Report and SL MAC CE ZTE CR 36.321 12.6.00798 F Rel-12 LTE_D2D_Prox-Core
- Ericsson think there is only one LCG in R12. Chairman think this CR is for R13.

=> CR is not agreed.

R2-153519 Miscellaneous corrections on Sidelink ASUSTEK COMPUTER (SHANGHAI) CR 36.321 12.6.00790 F Rel-12 LTE_D2D_Prox-Core

1st change
- LG agree with the intention but want to change to “for sidelink logical channels”. Panasonic, Ericsson think the sentence in 5.14.1.3 already covers this clarification. Ericsson think there may be issue in R13 if we introduce multiple SL grant. Huawei agree with the change.

=> Agree to the 1st change with change of “for sidelink logical channels”.

2nd change
- LG think the 10 bytes restriction is a guideline to eNB, and prefer to have it. AsusTek think if it could be a guideline it would be good to have NOTE for eNB. LG wonders whether there is difference between NOTE and normative text. Huawei wonders whether it is captured in other place that padding PDU is not allowed for SL.

=> Keep it as it is.

3rd change

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- Ericsson, QC support the change. LG think in legacy “transmission” includes both “transmission” and “retransmission”.

=> The change is agreed.

4th change

- QC, LG support.

=> The change is agreed.

5th change

=> The change is agreed.

=> With above changes, CR0790r1 is agreed in R2-153865 (AsusTek).

R2-153709 Events that trigger sidelink BSR Nokia Networks CR 36.321 12.6.00796 F Rel-12 LTE_D2D_Prox-Core

- Ericsson think there is no functional change, and does not improve readability. Nokia think “An SL-RNTI is configured by upper layers” is confusing, so want to make it clear. LG think the first four bullets refer to the UE in mode 1, and the last bullet refers to the event the UE mode is changed from mode 2 to mode 1.

=> CR is not agreed.

RLC

R2-153230 Corrections for STCH in 36.322 Huawei, HiSilicon CR 36.322 12.2.00108 F Rel-12 LTE_D2D_Prox-Core

=> CR is agreed.

R2-153399 Corrections for STCH in 36.322 Huawei, HiSilicon CR 36.322 12.2.00111 A Rel-13 LTE_D2D_Prox-Core

=> CR is not agreed.

Withdrawn

R2-153232 Corrections for reporting and cancellation of SL BSR Huawei, HiSilicon CR 36.321 12.6.00784 F Rel-13 LTE_D2D_Prox-Core

=> Withdrawn

7 LTE Rel-13

7.2 WI: CA enhancements

(LTE_CA_enh_b5C-Core, leading WG: RAN1, started: Dec. 14, target: Dec. 15, WID: RP-150771)

Time budget: 1 TU (+ 1TU for stage-3 UP aspects)

7.2.3 UP aspects

Stage-3 UP aspects

Documents submitted to this AI treated in the UP session

7.2.3.1 B5C

E.g. Header formats, …

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Activation/Deactivation

Optimization for Ci field

Use of new LCID

R2-153418 Details of Activation/Deactivation MAC CE in UE aspect Samsung Telecommunications discussion

- Samsung clarified that they still consider need for new LCID. The implicit configuration means that there is no need for RRC signaling. Huawei wonders why did we introduce a new LCID for DC PHR MAC CE. Samsung think the DC PHR MAC CE is an optional feature, so RRC signaling is needed. Ericsson think the situation in eCA is different from DC. ITL think even if more than 8 cells are configured, the eNB can send AD MAC CE with 1 byte. XInwei want to introduce a new LCID for new MAC CE. LG doesn't want to introduce a new LCID.

Discussion: whether 1 byte AD MAC CE is allowed even if highest sCellIndex is larger than 8.
=> If the highest sCellIndex is less than 8, the AD MAC CE is 1 byte.
=> If the highest sCellIndex is larger than or equal to 8, the AD MAC CE is 4 bytes.
=> It is up to eNB implementation to control the highest sCellIndex is below 8 when the number of configured cells are less than 8.

Discussion: new LCID

- Huawei, Ericsson, LG, Nokia, QC is ok with not introducing a new LCID. Samsung think there would be a big change if we don't introduce a new LCID. Nokia, Ericsson think we already have the MAC CE whose size depends on the configuration, e.g. PHR MAC CE. Samsung think in PHR MAC CE, there is a L field, but for this case, there is no L field. Samsung think fixed size MAC CE needs different LCIDs. ITL, AsusTek, ZTE, Xinwei want to introduce a new LCID. Huawei think there is no problem of ambiguity. MediaTek agree with Huawei. Samsung think common LCID works but brings much complexity.

Introduce a new LCID for AD MAC CE with 4 bytes
Option1: Introduce a new LCID 7
Option2: Do not introduce a new LCID 8
=> Come back at the next meeting.

R2-153654 LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs Ericsson discussion
R2-153324 Remaining issues on Activation/Deactivation MAC CE for b5C Innovative Technology Lab Co. discussion
R2-153577 Combination solution for AD MAC CE with up to 32 CCs Beijing Xinwei Telecom Techn. discussion
=> All documents are not treated as already covered by discussion under R2-153418.

R2-153655 CR for LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs Ericsson CR 36.321 12.6.00794 B Rel-13 LTE_CA_enh_b5C-Core
=> CR is not treated.

PHR

Optimization for Ci field

Location of Type2 PH field

R2-153420 Remaining issues on PHR MAC CE in UP aspect Samsung Telecommunications discussion

Proposal1
=> The bitmap in new PHR MAC CE format is followed by Type 2 PHs.

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Proposal2
- NTT DCM want to check with RAN1 whether it can be considered as simultaneous PUCCH-PUSCH transmission in case PUCCH is transmitted on PCell group and PUSCH is transmitted on PUCCH SCell group. Ericsson think simultaneous PUCCH-PUSCH transmission is configured per PUCCH group. Nokia confirms Ericsson's understanding.

=> The presence of PUCCH SCell Type 2 PH depends on simultaneousPUCCH-PUSCH configuration of the PUCCH cell group.

Proposal3

=> R13 Extended PHR MAC CE format is explicitly configured by RRC

New LCID for FE-PHR MAC CE
- Huawei think there is no need to introduce a new LCID. Samsung think there are still many LCID values left. Nokia think PHR is different from AD MAC CE because PHR is UL. Thus, a new LCID is needed for new PHR MAC CE. Ericsson, LG agree with Nokia. ITL think there is no difference between PHR and AD MAC CE.

=> New LCID is used for R13 Extended PHR MAC CE

R2-153263 PHR for CA enhancement for more than 5 CCs Nokia Networks discussion
- Samsung has sympathy for the proposal. LG think it would be sufficient to rely on the highest sCellIndex not on the highest sCellIndex with configured UL. Nokia think typically there would not many SCells with configured UL, so would like to rely on the highest sCellIndex with configured UL. LG think eNB can manage the highest sCellIndex with configured UL.

=> If the highest sCellIndex of SCell with configured UL is less than 8, the Ci field of PHR MAC CE is 1 byte.

=> If the highest sCellIndex of SCell with configured UL is larger than or equal to 8, the Ci field of PHR MAC CE is 4 bytes.

=> It is up to eNB implementation to control the highest sCellIndex of SCell with configured UL is below 8 when the number of configured cells are less than 8.

R2-153152 PHR format for eCA LG Electronics Inc. discussion
R2-153593 Remaining format for eCA PHR Alcatel-Lucent Shanghai Bell, Alcatel-Lucent discussion
R2-153506 Discussion on PHR for eCA CATT discussion
[moved from 7.2.3.2 to 7.2.3.1]

=> All documents are not treated as already covered by previous discussion.

R2-153297 Further Extended Power Headroom Report Nokia Networks CR 36.321 12.6.00786 B Rel-13 LTE_CA_enh_b5C-Core
R2-153298 Further Extended Power Headroom Report Nokia Networks CR 36.331 12.6.01862 B Rel-13 LTE_CA_enh_b5C-Core

=> All CRs are not treated.

BSR

New BSR format

R2-153651 Extension of BSR for CA enhancements beyond 5 CC Ericsson discussion
=> Noted.
R2-153588 BSR report for enhanced CA Alcatel-Lucent Shanghai Bell, Alcatel-Lucent discussion
=> Noted.
R2-153425 BSR format for B5C LG Electronics Inc. discussion
=> Noted.

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Discussion: maximum BS value
- Nokia think 25 Gbps is for DL not for UL, we don't need such high bit rate in UL. MediaTek think BS is controlled by eNB, and there would be no drastic change from legacy. MediaTek, Samsung don't see the need for enhancement for BSR.

=> No enhancement for BSR.

R2-153652 New BSR mapping table for Carrier Aggregation enhancements beyond 5 CCs Ericsson CR 36.321 12.6.00792 B Rel-13 LTE_CA_enh_b5C-Core
=> CR is not treated.

L2 header extension

L, SOstart, SOend = 16bit

AM RLC SN = 18bit, 16bit, 13bit

UM RLC SN = 18bit, 13bit

PDCP SN = 23bit

R2-153171 L2 enhancements for eCA SAMSUNG Electronics Co., Ltd. discussion

Discussion: PDCP SN size
- Nokia think that if we increase PDCP SN size, it should be informed to other related WGs, e.g. RAN3, CT4. Nokia think increasing PDCP SN to 23 bits are too much.

=> Take 23bits PDCP SN as a baseline
=> [CBF] Send LS to RAN3, CT4, SA3 to inform that PDCP SN size is increased to 23 bits in R2-153866 (Nokia).

Discussion: L, SOstart, SOend size
=> 16bits L, SOstart, SOend

R2-153299 Extending RLC header Nokia Networks CR 36.322 12.2.00109 B Relates to R2-153296 Rel-13 LTE_CA_enh_b5C-Core

Discussion: AM RLC SN size
- Nokia think 16 bits fit to two full bytes, and looks nice for AMD PDU segment.

=> 16bits AM RLC SN

Discussion: UM RLC SN size
- Samsung think we don't need to extend UM RLC SN. Huawei, Ericsson think it is good to extend UM RLC as well to cope with multiple HARQ operation. Samsung think UM RLC is mostly used for VoIP, which does not have large amount of data.

=> The need for extending UM RLC SN size is FFS.

=> CR is postponed.

R2-153364 Extention of SN and SO field in RLC PDU Huawei, HiSilicon CR 36.322 12.2.00110 B Rel-13 LTE_CA_enh_b5C-Core
=> CR is not agreed.

R2-153275 Layer 2 header size to support CA with up to 32 CCs Intel Corporation discussion
R2-153296 L2 enhancements for more than 5 CCs Nokia Networks discussion
R2-153362 UP impacts due to high peak data rate of 32CCs Huawei, HiSilicon discussion
R2-153605 Impact of carrier aggregation enhancement on L2 UP protocols Ericsson discussion
=> All documents are not treated as already covered by discussion under R2-153171.

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R2-153363 Extention of L field in MAC PDU Huawei, HiSilicon CR 36.321 12.6.00788 B Rel-13 LTE_CA_enh_b5C-Core
R2-153365 Extention of SN field in PDCP PDU Huawei, HiSilicon CR 36.323 12.4.00141 B Rel-13 LTE_CA_enh_b5C-Core
R2-153366 Extention due to high data rate Huawei, HiSilicon CR 36.331 12.6.01870 B Rel-13 LTE_CA_enh_b5C-Core
R2-153601 Extending MAC protocol header Ericsson CR 36.321 12.6.00791 B Rel-13 LTE_CA_enh_b5C-Core
R2-153602 Extending RLC protocol header Ericsson CR 36.322 12.2.00112 B Rel-13 LTE_CA_enh_b5C-Core
R2-153603 Extending PDCP protocol header Ericsson CR 36.323 12.4.00142 B Rel-13 LTE_CA_enh_b5C-Core
=> All CRs are not treated.

7.2.3.2 PUCCH on SCell

SR

SR prohibit timer

SR failure

R2-153467 Discussion on SR prohibition time and D-SR failure HTC Corporation discussion

Proposal1
- Huawei think SR period based on shorter SR is more reasonable. Samsung agree with Huawei. Ericsson think based on PCell is aligned with legacy. LG support proposal 1 because PUCCH SCell can be deactivated. Nokia wonders how the SR based on PCell works if the SR is not configured on PCell. LG think the only issue is when the SR is configured on both PCell and PUCCH SCell. If there is only one SR configured, it is straightforward that the SR period follows configured SR. Samsung worries about long SR prohibit time.

SR prohibit timer
Option1. based on PCell SR period 4
Option2. based on shorter SR period 13
=> SR prohibit timer is based on shorter SR period, regardless of whether the PUCCH SCell is deactivated.

Proposal2
- Huawei think if there is SR only on PUCCH SCell, it is overkill to release all PUCCH/SRS resource at SR failure. Instead Huawei want to release PUCCH SCell group. HTC think SR failure comes from desych, and want to release all PUCCH/SRS resource. LG doesn't want to differentiate the cause of SR failure, so support the proposal 2. Panasonic, Samsung, Nokia support the proposal 2.

=> PUCCH/SRS resources should be released for all serving cells when SR_COUNTER reaches dsr-TransMax.

R2-153368 Issues for SR on PUCCH Scell Huawei, HiSilicon discussion

Proposal3
=> When Scell with SR is deactivated, RA on PCell is triggered if there is no valid SR configured on the PCell.

R2-153228 Remaining issues on PUCCH SCell Nokia Networks discussion

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R2-153417 Remaining issues on interleaved SR Samsung Telecommunications discussion
=> All documents are not treated as already covered by discussion under R2-153467.

Fast activation of PUCCH SCell

Activation + Random Access

SR transmission before activation

R2-153226 PUCCH SCell pre-activation Nokia Networks discussion
=> Noted.

R2-153369 Pre-activation SR Huawei, HiSilicon discussion

Discussion on the need of pre-activation
- Nokia think if PCell SR is short, there is no need to configure SR on PUCCH SCell. LG think we already decided that UL transmission is not possible in deactivated SCell. Nokia explains that the UE autonomously activate the SCell. Intel think the UE has to make DL synchronization on SCell, which may cause additional power consumption. Nokia think the UE activates the SCell later. Ericsson should avoid the UE sends something in deactivated SCell. Samsung think Nokia's proposal is over-optimization.

=> No need for pre-activation.

R2-153571 Activation_deactivation of PUCCH SCell NTT DOCOMO INC. discussion
=> Noted.

R2-153509 PUCCH SCell activation CATT discussion

Discussion on reducing scheduling delay
- Samsung does not want to introduce a new MAC CE to reduce the delay. Moreover, Samsung think there is not so much gain. NTT DCM explains that there would be additional delay when PUCCH SCell is activated. ALU think the frequency of PUCCH SCell out-of-synch is not that high, so does not want to optimize. Nokia think the eNB can send PDCCH order earlier. LG think the eNB can configure PUCCH on the already activated SCell. Panasonic think we can use PDCCH order.

=> No mechanism is introduced to reduce scheduling delay on PUCCH SCell.

R2-153573 Draft LS on PUCCH SCell activation NTT DOCOMO INC. LS out Related to R2-153571
R2-153415 Reducing use delay on PUCCH SCell III discussion
=> All documents are not treated as already covered by previous discussion.

Time Alignment

SRS resource release at TAT expiry

sCellDeactivationTimer handling

R2-153367 SRS handling for SCells in Secondary PUCCH Group Huawei, HiSilicon discussion
=> When the TAT associated with sTAG not including PUCCH SCell is not running, the SRS resources for the SCell in the sTAG shall be released and SRS transmission on other TAGs shall not be impacted.

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R2-153154 Remaining issue on TAG for CA enhancement LG Electronics Inc. discussion
- LG explains that proposal 3 is not correct and withdrawn.
=> It is allowed to add a PUCCH SCell or configure PUCCH to an existing SCell in a TAG of which TAT is not running.
=> It is left up to eNB implementation how to handle the TAT of a TAG if PUCCH SCell is added/configured to a TAG of which TAT is not running.

MAC others

R2-153159 sCellDeactivationTimer for PUCCH SCell LG Electronics Inc. discussion
- Samsung wonders in case 1 the eNB may not know the exact timing when the valid CQI is reported. Samsung think the eNB should deactivate the SCell first and then configure PUCCH on the deactivated SCell. CATT think we already agreed to allow configuring PUCCH on the already activated SCell. ALU think release/add is used when PUCCH is configured on a SCell. Nokia think we agreed that eNB deactivates the SCell before configuring PUCCH. Chairman think RAN2 agreed to allow configuring PUCCH on a already activated SCell. NTT DCM confirms, but explained RAN2 also agreed to revisit this issue. Huawei explained that even if the SCell is release/add, the activation status is not changed.
- Ericsson think it would be sufficient to say that "the sCellDeactivationTimer is not applied for PUCCH SCell". Nokia agree with Ericsson, there is no need to specify start/stop of the timer.
=> Come back at the next meeting.

R2-153463 Managing PUCCH resources on a deactivated PUCCH SCell HTC Corporation discussion
=> Noted.

7.9 WI: Dual Connectivity Enhancements

(LTE_dualC_enh-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-150490)

Time budget: 0 TU in main room (+1 TU in stage-3 UP session)

Documents submitted to this AI treated in the UP session

BSR and PDCP data transmission

R2-153316 PDCP data transmission for UL split bearer Huawei, HiSilicon discussion
- ZTE doesn't want to make PDCP data transmission based on BSR. ZTE think the data transmission should be based on UL data indication from PDCP. Nokia think this is a kind of optimization, and want to stick to the previous agreement. Ericsson agree with Nokia. LG think proposal 1 is not over-scheduling, but waste of UL resource, so LG agree with the intention. Ericsson think fluctuation around threshold should not happen often.

=> PDCP data indication to MAC is based on the amount of data at the time of indication
=> BSR triggering is based on the legacy BSR triggering rule
=> PDCP data transmission is based on the amount of data in PDCP and the threshold at the time of UL grant reception

- LG think the third bullet imposes additional requirement to UE implementation.
- CATT think we have to discuss how to coordinate between two eNBs to avoid over-scheduling.

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R2-153148 PDCP data indication to MAC with threshold LG Electronics Inc. discussion
- Ericsson think this is a modeling issue, and think there is always PDCP status available in MAC. Nokia agree with Ericsson. LG think if 0 is not indicated, the other MAC entity would not trigger BSR if the amount of data goes above threshold again. Panasonic think the current text already implies that 0 is indicated to the other MAC entity. Samsung think the proposal makes the UE behavior clear. Samsung think the more serious problem is the other MAC entity would report some value other than 0 when the PDCP data amount is below threshold. ALU think indication to the other MAC entity would be helpful for BSR in the other MAC entity. ZTE agree with ALU.

=> If the amount of PDCP data is less than the threshold, the PDCP entity indicates the actual amount of PDCP data to configured MAC and 0 to non-configured MAC.

R2-153568 Over allocation problem on UL bearer split NTT DOCOMO INC. discussion
=> Already covered by discussion in R2-153316.

R2-153318 UL data transmission upon SCG-RLF for UL split bearer Huawei, HiSilicon discussion
- Kyocera think option 3 is a good choice. Samsung think option 1 is a general consequence of what we have discussed. Samsung think optimization for SCG-RLF is not needed.

=> Upon SCG-RLF, the data transfer to the MeNB is maintained, and the data transfer to the SeNB is suspended.

R2-153327 How to capture uplink split in the relevant specifications Samsung Electronics Co., Ltd discussion
Proposal3
- Ericsson want to have more larger maximum value. Nokia think 0 should be minimum.

=> ul-DataSplitThreshold is defined as byte-based. Minimum and Maximum value is FFS.

R2-153089 Stage 3 Details of DC Enhancements Nokia Networks discussion
R2-153149 Buffer status reporting and PDCP data transmission LG Electronics Inc. discussion
R2-153315 Delivery of PDCP PDU to RLC Layer for UL Split Bearer Huawei, HiSilicon discussion
R2-153319 Over-scheduling problem for UL split bearer Huawei, HiSilicon discussion
R2-153443 Remaining Issues of Supporting Uplink Split Bearers ITRI discussion
R2-153491 Clarifications on BSR of UL bearer split ZTE Corporation discussion
R2-153507 Consideration on over-scheduling issue for uplink split CATT discussion
R2-153520 Scheduling coordination between MeNB and SeNB CATT discussion
R2-153704 Discussion on UL bearer split for Dual connectivity: BSR triggers and timers Alcatel-Lucent, Alcatel-Lucent Shanghai Bell discussion

=> All documents are not treated as already covered by previous discussion.

R2-153760 PDCP data transfer procedure for uplink bearer split Ericsson CR 36.323 12.4.00143 B Rel-13 LTE_dualC_enh-Core
R2-153329 Introducing threshold based uplink split operation into the RRC specification Samsung Electronics Co., Ltd draftCR 36.331 12.5.0 Rel-13 LTE_dualC_enh-Core
R2-153336 Introducing threshold based uplink split operation into the PDCP specification Samsung Electronics Co., Ltd draftCR 36.323 12.4.0 Rel-13 LTE_dualC_enh-Core
R2-153383 Clarification of PDCP behavior for uplink split bearer Kyocera discussion Rel-13 LTE_dualC_enh-Core

=> All CRs are not treated.

PDCP discard

R2-153088 Further discussion on PDCP discard with split bearers Nokia Networks discussion
=> Noted
R2-153157 PDCP Discard issue with UL split bearers LG Electronics Inc. discussion
=> Noted
R2-153387 Discussion on the PDCP discard issue in bear split ZTE Corporation discussion
=> Noted
R2-153317 PDCP Discard Issue for UL Split Bearer Huawei, HiSilicon discussion
=> Noted

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Handling of PDCP discard
- Option1. Header-only PDCP PDU
- Option2. Leave it up to UE implementation (with a NOTE)
- Option3. Leave it up to eNB implementation
- Option4. PDCP Control PDU

- Samsung think the result of SN gap is not that critical, so want to go for simplest option, i.e. option 3. Ericsson think option 2 and 3 are same. Samsung think option 2 requires UE implementation should do something. QC, MediaTek is fine with option2.

=> Go for option 2, i.e. leave it up to UE implementation with a NOTE.

R2-153394 Draft CR_Improvement on the detection of discarded PDCP PDU ZTE Corporation draftCR 36.323 13.0.0

=> CR is not treated.

R2-153160 PDCP SDU discard in split bearers LG Electronics Inc. draftCR 36.323 12.4.0 Rel-13 LTE_dualC_enh-Core
- Ericsson think the NOTE does not say anything about how the UE avoids SN gap after discard. LG think there are couple of ways to avoid SN gap, and it may be difficult to list all the possible UE behaviors in the NOTE. Samsung want to change “prevent” to “minimize”. MediaTek want to reword like “It is up to UE implementation to minimize SN gap after SDU discard.” DCM propose to add “UL”.

=> Add “UL” for split bearer

=> Change the last sentence to “It is up to UE implementation to minimize SN gap after SDU discard.”

=> Include in the PDCP running CR with above changes.

=> CR is postponed.

R2-153162 PDCP reordering enhancement LG Electronics Inc. discussion
R2-153237 PDCP DiscardMediaTek Inc. discussion
R2-153330 On preventing PDCP SN gap due to discard timerSamsung Electronics Co., Ltd discussion
R2-153444 PDCP Discard Issue of Split Bearer ITRI discussion
R2-153758 PDCP data transfer procedure for uplink bearer split Ericsson discussion

=> All documents are not treated as already covered by previous discussion.

PDCP Control PDU

R2-153155 Transmission of PDCP Control PDU in split bearer LG Electronics Inc. discussion
- Nokia think transmitting to only MeNB may delay the transmission of PDCP status report. Ericsson agree with Nokia. LG think most delay comes from X2 delay. Panasonic agree with LG. Samsung think transmitting PDCP status report only to eNB does not guarantee shorter delay. QC want to avoid special handling of PDCP status report. Panasonic think the MeNB can issue UL grant immediately to avoid delay of PDCP status report. CATT agree with Samsung. Huawei support to restrict the PDCP status report transmission to MeNB. Panasonic think if the PDCP control PDU is sent to SeNB, it may be useless due to long X2 delay. Samsung think SeNB can prioritize PDCP control PDU transmission to MeNB in X2 interface. LG think there is no PDCP in SeNB, so wonders how the SeNB can prioritize. Nokia think PDCP control PDU should be transmitted to both eNBs. CATT think for UL split bearer, the X2 delay should be low. DCM think the problem exist from R12, and wonders whether the optimization is needed.

=> PDCP control PDU is handled same as PDCP data PDU.

R2-153326 PDCP Control PDU for UL Split Bearer Samsung Electronics Co., Ltd discussion
R2-153090 Transmission of PDCP status report at PDCP data recovery Nokia Networks discussion
R2-153256 Transmission of PDCP control PDUs for Split bearers PANASONIC R&D Center Germany discussion

=> All documents are not treated as already covered by previous discussion.

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PBR

R2-153522 Considerations on PBR of UL split bearer CATT discussion
- DCM think the PBR is typically configured for non-GBR bearer. CATT think for each RB, there is a PBR. ALU think PBR is for avoiding starvation, and configuring PBR by only one eNB should be sufficient. CATT think PBR configuration is up to eNB implementation. In case two PBRs are configured, the sum of them should be equal to GBR. Nokia think we can just rely on eNB configuration. ALU think if there are two PBRs, the eNB may allocate UL grant more than needed. Samsung think even if the sum of PBRs exceed minimum bit rate, there is no critical problem.

=> For PBR, the UE just follows eNB configuration.

R2-153703 Discussion on UL bearer split for Dual Connectivity: QoS guarantee Alcatel-Lucent, Alcatel-Lucent Shanghai Bell discussion
=> The document is not treated as already covered by discussion in R2-153522.

SFN/subframe offset

R2-153175 Kick off to work on SFN/subframe offset reporting NTT DOCOMO, INC. (Rapporteur) discussion
=> [EMAILDISC] SFN/subframe offset reporting (NTT DOCOMO).

Withdrawn

R2-153328 Introducing threshold based uplink split operation into the PDCP specification Samsung Electronics Co., Ltd CR 36.323 12.4.00140 F Rel-13 LTE_dualC_enh-Core
=> Withdrawn

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Summary of the UP ad hoc meeting

Agreed CRs

R2-153862 Correction on Type 2 PH reporting Intel Corporation CR 36.321 12.6.00799r1 F Rel-12 LTE_CA-Core
R2-153863 Corrections for reporting and cancellation of SL BSR Huawei, HiSilicon CR 36.321 12.6.00795r1 F Rel-12 LTE_D2D_Prox-Core
R2-153864 Corrections to Sidelink in MACIntel Corporation CR 36.321 12.6.00785r1 F Rel-12 LTE_D2D_Prox-Core
R2-153865 Miscellaneous corrections on Sidelink ASUSTEK COMPUTER (SHANGHAI) CR 36.321 12.6.00790r1 F Rel-12 LTE_D2D_Prox-Core
R2-153230 Corrections for STCH in 36.322 Huawei, HiSilicon CR 36.322 12.2.00108 F Rel-12 LTE_D2D_Prox-Core

Agreed outgoing LS

None

Comeback on Friday

Send LS to RAN3, CT4, SA3 to inform that PDCP SN size is increased to 23 bits in R2-153866 (Nokia).

E-mail discussion for the next meeting

Rel-13 DC: SFN/subframe offset reporting (NTT DOCOMO, related to R2-153175)

Comeback at the next meeting

New LCID for AD MAC CE with 4 bytes (related to R2-153418)
Handling of sCellDeactivationTimer for PUCCH SCell (related to R2-153159)

Agreements on Rel-13 items

CA enhancements

=> If the highest sCellIndex is less than 8, the AD MAC CE is 1 byte.
=> If the highest sCellIndex is larger than or equal to 8, the AD MAC CE is 4 bytes.
=> It is up to eNB implementation to control the highest sCellIndex is below 8 when the number of configured cells are less than 8.
=> The bitmap in new PHR MAC CE format is followed by Type 2 PHs.
=> The presence of PUCCH SCell Type 2 PH depends on simultaneousPUCCH-PUSCH configuration of the PUCCH cell group.
=> R13 Extended PHR MAC CE format is explicitly configured by RRC
=> New LCID is used for R13 Extended PHR MAC CE
=> If the highest sCellIndex of SCell with configured UL is less than 8, the Ci field of PHR MAC CE is 1 byte.
=> If the highest sCellIndex of SCell with configured UL is larger than or equal to 8, the Ci field of PHR MAC CE is 4 bytes.
=> It is up to eNB implementation to control the highest sCellIndex of SCell with configured UL is below 8 when the number of configured cells are less than 8.
=> No enhancement for BSR.
=> Take 23bits PDCP SN as a baseline

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=> 16bits L, SOstart, SOend
=> 16bits AM RLC SN
=> The need for extending UM RLC SN size is FFS.

DC enhancements

=> PDCP data indication to MAC is based on the amount of data at the time of indication
=> BSR triggering is based on the legacy BSR triggering rule
=> PDCP data transmission is based on the amount of data in PDCP and the threshold at the time of UL grant reception
=> If the amount of PDCP data is less than the threshold, the PDCP entity indicates the actual amount of PDCP data to configured MAC and 0 to non-configured MAC.
=> Upon SCG-RLF, the data transfer to the MeNB is maintained, and the data transfer to the SeNB is suspended.
=> ul-DataSplitThreshold is defined as byte-based. Minimum and Maximum value is FFS.
=> SN Gap handling is left up to UE implementation with a NOTE.
=> PDCP control PDU is handled same as PDCP data PDU.
=> For PBR, the UE just follows eNB configuration.

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Annex H:
LTE ProSe and eDRX session

On Wed of RAN2 #91, in parallel to the main LTE session, an LTE ProSe and eDRX session was held in room Function Room 12 (Level 1 Floor) chaired by RAN2 vice-chairman Diana (InterDigital) addressing:

On Wedsday:
7.10 LTE: Rel-13: WI: RAN enhancements for extended DRX in LTE
7.5 LTE: Rel-13: WI: ProSe enhancements

The corresponding report of this session R2-153885 was presented and agreed on Fri in the joint session and the contents is provided in this Annex H for convenience reasons.

7.5 WI: ProSe enhancements

(LTE_eD2D_Prox-Core, leading WG: RAN2, started: Dec. 14, target: Dec. 15, WID: RP-150441)

Time budget: 3 TU

Documents in this agenda item handled in the LTE Break Out session

R2-153734 Running stage 2 CR TS 36.300 to capture agreement on eD2D Qualcomm Incorporated
draftCR 36.300 13.0.0 Rel-13 LTE_eD2D_Prox-Core

Email discussion

✉ **[91#16][LTE/eD2D] - Running stage 2 CRs**
- Capture agreements on eD2D up to RAN2#91
- Outcome: endorse the running stage CR
- Deadline: 2 weeks after the meeting

7.5.1 UE-to-Network Relays

Including output of email discussion [90#25][LTE/ProSe] Relay UE initiation, discovery and selection/re-selection (ZTE)

R2-153764 Report of email discussion [90#25][LTE/ProSe] Relay UE initiation, discovery and selection/re-selection ZTE (rapporteur) report

Proposal 1b: Take a final decision whether the relay discovery model is known/controlled or not by the eNB.

- ZTE thinks that discovery model network control is not desirable by a majority of companies
- LG, OPPO, doesn't think that the eNB doesn't need to be aware as there isn't much to control from the eNB side and there is no gain.
- ZTE thinks that the information can be used by the eNB to decide how many relay UE can be configured, for example if Model B is being used we can configure more relay UEs as they will utilize less resources.
- ZTE thinks that this information can be made available in an easy way.
- Nokia Net thinks that there was no majority of companies wanting to have awareness and in Rel-12 we decided to keep the type of discovery transparent to the eNB.
- Huawei wonders if the UE can use one or both models. Qualcomm thinks that both options are allowed and the ProSe function can configure both. ZTE thinks that both can be used and this is one of the reasons why the eNB shouldn't control which type of model to use.
- Ericsson thinks that there is a benefit of eNB knowing this information as it impacts the amount of resources the eNB needs to allocate.
- Qualcomm thinks that we should continue using the Rel-12 modelling. Qualcomm also wonders how idle mode UEs would provide this information. ALU agrees with Qualcomm.

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- CATT thinks that the eNB can determine what type of discovery the UE is using by the Rel-12 mechanism.

Proposal 2a: If UEs are configured as Relay UE via broadcast signalling, the eNB may broadcast a minimum and/or a maximum Uu link quality (RSRP/RSRQ) thresholds that UEs need to respect to autonomously start acting as relay UEs.

- Huawei wonders what autonomously starting to act as a relay means. ZTE thinks that this is for the case that the UE can start acting as a relay by dedicated signaling.
- ALU thinks that we shouldn't put a restriction with a minimum and maximum.

Proposal 3: UEs can be configured as Relay UE either via dedicated or via broadcast signalling.

- ZTE thinks that if we allow broadcast signalling then the UE can start sending discovery message when the thresholds are met.
- Motorola solutions thinks that the minimum quality makes sense however we should not have a maximum threshold. Ericsson thinks that this solution can be realized by configuration options.
- Samsung wonders why we need the threshold for the dedicated signalling case. ZTE thikns that for the dedicated case we can use the thresholds to limit the amount of relay requests.
- ALU wonders what is the motivation for using dedicated signalling to control the initiation of a relay UE.
- Chair thinks that given that we will be using a separate pool for relay discovery and therefore the eNB needs to be aware that the UE is a relay UE.
- Huawei thinks that we shouldn't allow Model A UEs to start transmitting without dedicated signalling. LG thinks that if that is the concern that the network has the option to not configure a pool for transmissions.
- Nokia Net wonders if the eNB can override the UE autonomous initiation
- US Gov wonders where the policy of which UE can become a relay is defined for the broadcast case. ZTE - Policy control is done at the ProSe function.
- Ericsson thinks that the SIB would indicate whether the UE can start autonomously to be a relay or whether the UE has to request resources to become a relay, similar to Rel-12.
- Samsung indicates that in Rel-12 the UE cannot use the broadcast information if it is in RRC connected. Ericsson thinks that maybe we need to think about this for the next meeting.
- Samsung wonders if the discussion is for both the rx and tx. ZTE thinks that at least these procedures are applicable for transmission pools.

Proposal 4: If Relay UEs are initiated by broadcast signaling, they can also perform relay discovery when in idle. If Relay UEs are initiated by dedicated signaling, they need to stay in connected to perform relay discovery (e.g. to allow the network to de-activate them if needed).

- Huawei thinks that a UE doing Model A shouldn't be allowed to do discovery in idle. ZTE thinks that the UE should be allowed to transmit any type of discovery messages in idle mode.
- Nokia Net thinks that SA2 already has the understanding that relay announcements can be done in idle mode.

Proposal 7: A sidelink discovery resource pool specific for relay discovery shall be defined.

- US gov wonders if the pools is only for relay discovery or also for other PS discovery purposes. QC thinks it should be only relay discovery as we shouldn't have other services interfering.
- Huawei wonders if the pool is referring to transmitting and/or receiving pool. Ericsson thinks that the pool should be at least for PS operation and who is allowed to transmit on that pool can be discussed further. ZTE thinks that we need to configure at least a rx and a tx pool for PS need to be different than the pools for commercial services.

Proposal 5a: Remote UEs can only start transmitting relay discovery solicitation messages while in RRC Connected.

- Intel, LG, ALU , BlackBerry doesn't think that we should have such limitation and if the discovery resource is broadcast the UE should be allowed to send a solicitation message. Intel thinks that we can minimize specification impact by following Rel-12 relay discovery.
- Qualcomm, Ericsson, Huawei supports ZTE

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- Samsung wonders why we would now restrict the UE from transmitting if there are resources being broadcasted in idle mode. ZTE doesn't see a need for the UE to transmit a solicitation message in idle.
- LG thinks that it is inefficient for the UE to move to connected mode for a solicitation message, as there may be no relay there.
- ZTE thinks that if we allow the UE in idle to send a messages then we should introduce the threshold
- Qualcomm thinks that we should also take the load of the eNB into account before the UE starts to look for a relay.
- Ericsson wonders why a UE in idle needs to look for a relay if it doesn't have any data.

Proposal 6: A remote UE may only transmit relay discovery solicitation messages if the Uu link quality at the UE is below a network configured threshold.

- Samsung wonders what this means for the spec as we don't mention solicitation in our specs. ZTE thinks that we would capture the UE can transmit in the relay discovery, without mentioning solicitation.
- Sony: should the UE also consider the neighbour cell measurement. ZTE and Ericsson thinks that we should just use the serving cell to keep the UE implementation simple.
- Huawei thinks the UE may also base monitoring of discovery messages based on this threshold (e.g. model A).

=> Noted

Agreements:

Relay UE initiation

- A sidelink discovery resource pool specific for at least relay discovery will be defined. FFS if the pool is for only relay operation or other PS discovery services can use the pool. FFS whether this pool is used by both remote UE and relay UEs or only relay UEs.
- If the eNB doesn't broadcast any information associated to relay operation then relay operation is not supported.
- The reception pools for relay discovery are provided by broadcast signalling.
- The eNB can broadcast that relay operation is supported and broadcasts tx resource pool(s) for relay discovery. The eNB may broadcast a minimum and/or a maximum Uu link quality (RSRP/RSRQ) thresholds that UEs need to respect to autonomously start/stop the relay discovery procedure using the broadcasted information. The network has the option to configure none, one or both thresholds. FFS if the eNB can control the UEs on an individual basis if it is broadcasting relay discovery resources. FFS if a UE in connected mode can use the broadcast relay discovery resources.
- The eNB can broadcast that relay operation is supported and but does not broadcast a tx resource pool for relay discovery. In this case the UE can initiate a request for relay discovery resources, by dedicated signalling and the eNB can configure the UE to become a relay by dedicated signalling. FFS if the eNB can optionally broadcast a minimum and/or a maximum Uu link quality (RSRP/RSRQ) thresholds that UEs need to respect to before requesting tx relay discovery resources and if a differentiation of behavior between Model A and Model B.
- If Relay UEs are initiated by broadcast signaling, they can also perform relay discovery when in idle. If Relay UEs are initiated by dedicated signaling, they can perform relay discovery as long as they are in connected mode.

Relay discovery for in-coverage remote UE

- UEs can transmit relay discovery solicitation messages while in RRC Connected and RRC idle (if network configured)
- A remote UE may only transmit discovery solicitation messages if the Uu link quality at the UE is below an optional network configured threshold.

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7.5.1.1 Relay UE initiation/discovery

Relay UE initiation (e.g. network control / criteria for initiation / supported RRC modes)

Relay UE discovery (in coverage): The level of eNB control of discovery transmission initiation (Model B) (if any)

Not treated

R2-153672 Relay Initiation CATT discussion
R2-153765 Discussion on relay initiation and discovery ZTE, Ericsson, Intel, Interdigital discussion
R2-153572 Consideration on relay UE initiation and release process SHARP Corporation discussion

R2-153239 Considerations on Relay initiation Huawei, HiSilicon discussion
R2-153254 Discussion on relay initialization procedure Shenzhen Coolpad Technologies discussion
R2-153351 Consideration of initiation of ProSe UE-to-Network Relays Kyocera discussion
R2-153426 Network control on relay UE initiation and activation ITRI discussion
R2-153462 Initiation of ProSe UE-to-Network relay Ericsson discussion
R2-153476 Considerations on supported RRC modes for relay discovery Potevio Company Limited discussion
R2-153550 Discussion on UE-to-Network Relay initiation General Dynamics UK Limited discussion
R2-153552 Behaviour of the UE-to-Network relay General Dynamics UK Ltd discussion
R2-153626 Relay initiation and (re)selection for Public Safety UE Alcatel-Lucent, Alcatel-Lucent Shanghai Bell discussion
R2-153675 Signalling considerations for relay UE initiation Intel Corporation discussion
R2-153678 Further discusion on some relay related aspects Samsung discussion
Late
R2-153732 *Relay UE initiation and discovery Qualcomm Incorporated discussion*
R2-153744 MCPTT service over relays: In-coverage to Out-of-coverage transition BlackBerry UK Limited discussion
R2-153747 MCPTT service over relays: Out-of-coverage to In-coverage transition BlackBerry UK Limited discussion
R2-153749 In coverage MCPTT UEs and UE-to-Network relaying BlackBerry UK Limited discussion
R2-153786 Initiation of relay function LG Electronics Inc. discussion
R2-153826 Inter-cell relay selection LG Electronics Inc. discussion

7.5.1.2 Relay UE selection/re-selection

Relay UE selection / re-selection (in coverage): The level of eNB control in relay selection (if any).

Is Uu link quality used for selection/reselection purposes? Criteria for selection/reselection.

Can the relay UE trigger reselection?

Level of eNB control for in-coverage UEs relay selection?

R2-153766 Discussion on Remote UE's Relay discovery, selection and reselection ZTE, Ericsson, Interdigital, Telecom Italia discussion

Proposal 8: *In case remote UE autonomous relay UE selection is preferred, the remote shall UE inform the eNB and receive an authorization from the eNB before initiating the secure layer-2 link association with the relay UE.*

- LG indicates that if the UE follows existing Rel-12 procedures the UE can perform communication without notifying the eNB. ZTE thinks that even when the eNB broadcasts resources the UE is mandated to send the UESidelink information.
- Sony thinks that we should discuss if an idle mode UE has to move to RRC connected to perform the selection
- ZTE thinks that we can also provide additional information, e.g. relay node ID. Qualcomm thinks that we can provide the relay information using the existing field, layer-2 destination ID, in *UESidelinkinformation.*
- Samsung, ALU doesn't see the need to tell the eNB the communication request is for relay. Ericsson, QC, LG and ZTE, TIM thinks that there is need to indicate to the eNB. The eNB needs to know what the UE plan to do. LG thinks that how we use the resources for relay UEs may be different so it would be important for the eNB to know.
- Nokia Net and ALU think that we should down prioritize the in-coverage scenario.

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- Intel wonders if the UE has already resources in connected mode then is the UE still expected to perform this procedure. Qualcomm explains that in Rel-12, as soon as the UE has data for a new destination ID it is required to send the request. Intel wonders if the UE has received mode 2 resources, does it still send the request. Huawei thinks that regardless of the mode of resources the UE has to send the request for every new destination ID.

Proposal 9*: The possible triggers for relay UE re-selection are:*

- *The remote UE detects that the PC5 link quality for the currently selected relay UE is lower than a threshold*
- *The remote UE receives a PC5 connection release message or similar indication from the relay UE*

- LG thinks that these triggers are a minimum but a higher layer criteria should also be taken into account
- Nokia Net thinks that SA2 doesn't support reselection and the UE has to perform connection establishment. Qualcomm thinks that RAN can reselect and the SA2 would just initiate a new connection establishment to the new UE
- Sony wonders why we are not considering the quality of the target cell. ZTE thinks that the target relay should be taken into account but we also need to consider having a minimum threshold. Sony thinks that the threshold could be a trigger to initiate measurements.
- Samsung thinks that we need to define what a relay re-selection is. Intel thinks it is the process in which a UE is already connected to a relay and based on some criteria it decides to connect to a new relay.
- Motorola solutions thinks it is important to ensure that reselection takes application information into account.
- Intel wonders if the PC5 release message is a higher layer message. Qualcomm confirms that this is the understanding. Intel wonders if this message is proved to the lower layers.
- Ericsson wonders if Uu is taken into account in selection.
- Intel thinks that for next meeting we should clearly define what we mean by selection and reselection.

=> Noted

Relay Selection/re-selection for in-coverage remote UE

- An in-coverage remote UE performs relay selection (using the same selection criteria as out-of-coverage)
- In connected mode, after selecting a relay, the remote UE informs the eNB using the *UESidelinkInformation* similar to Rel-12. The remote UE indicates in the message that the request is for relay one-to-one communication purposes. The eNB similar to rel-12 can chose to provide or not provide resources for relay communication.

Relay selection/reselection for all remote UEs

- No other RAN2-specified criteria, except radio link quality, shall be considered for relay UE selection/re-selection.
- A relay UE is considered as suitable if the PC5 link quality exceeds a configured signal strength threshold.
- The detailed criteria to select a new relay and the ranking of relays is FFS.
- The remote UE can also trigger a selection of a new relay when it receives a release message from the relay UE (as defined by SA2).

Email discussion

✉ **[91#31][LTE/D2D] – Relay selection and reselection - Qualcomm**

- Define relay selection/reselection terminology
- Define the detailed criteria to select a new relay and whether/how to perform the ranking of relays
- **Deadline** – 2 stages
  1. Sept. 11 - Company opinions provided
  2. Sept. 18 - Rapporteur provides way forward

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Not treated

R2-153751 Relay UE Selection and Reselection Mechanisms Qualcomm Incorporated discussion
R2-153830 Relay Selection Process and Radio Condition Evaluation LG Electronics Inc. discussion
R2-153282 Measurement on PSDCH Intel Corporation discussion

R2-153482 Sidelink measurements for Relay Selection Ericsson discussion
R2-153106 Considerations on trigger condition for relay reselection Fujitsu discussion
R2-153107 The remote UE access to relay from neighbor cell Fujitsu discussion
R2-153128 Relay Measurements and Selection/Reselection Sony discussion
R2-153283 Radio quality criteria for the (re)selection of the relay UE Intel Corporation discussion
R2-153403 Procedure of Relay-UE selection and reselection Huawei, HiSilicon discussion
R2-153475 Discussion on relay UE selection and re-selection Potevio discussion
R2-153481 Relay UE selection in coverage Ericsson discussion
R2-153488 Discussions on L3-based UE-to-Network Relays communication procedure CATR discussion
R2-153554 Relay selection for the in-coverage remote UE General Dynamics UK Ltd discussion
R2-153597 Relay selection criteria for public safety discovery Ericsson discussion
- uu/pc5 rules and no reselection in coverage

R2-153598 Transport channel for public safety discovery Ericsson discussion
- include radio layer parameters in the MAC

R2-153714 Relay Selection while in E-UTRAN coverage Nokia Networks discussion
R2-153808 Relay Selection Issues CATT discussion

Withdrawn

R2-153487 Discussions on L3-based UE-to-Network Relays communication procedure CATT other

7.5.1.3 Connection establishment

Once relay selection is performed, what is the level of eNB control for connection establishment for out-of-coverage UEs (e.g. does the eNB authorise remote UEs)? What information is required to be transmitted to the eNB?

For in-coverage UEs, when is relay connection establishment done and what is eNB involvement?

AS involvement (UE and/or eNB) with NAS in deciding "when" to switch “allowed traffic” (as determined by higher layers) between Uu and PC5 (if any).

Connection establishment

R2-153241 UE-to-Network Relay connection establishment Huawei, HiSilicon discussion

Proposal 3: After receiving a connection request from a remote UE, the relay UE should send a connection request message to the eNB for admission control.

- Ericsson supports the proposal.
- Qualcomm thinks that when the relay receives a connection from a new relay as per Rel-12 procedures, the UE will trigger a UEsidelinkinformation.
- Motorola solutions is wondering what the admission control is based on. Huawei thinks that if we don’t notify the eNB of the new remote UE then the eNB may not provide enough resources for the relay UE.
- Ericsson thinks that it is important for the eNB to know so it can send it’s QCI parameters correctly. Other reasons can be to know how many UEs are connected.
- Motorola solutions thinks that admission control should also have some form of service guarantee. Qualcomm thinks that informing the eNB is a tool to ensure that the relay UE can provide the required service.

Agreements on connection establishment

- Authorization of remote UEs is done by higher layers
- A relay UE performing relay communication has to be in RRC connected mode.
- After receiving a layer-2 link establishment request from a remote UE, the relay UE informs the eNB using *UESidelinkInformation*. The relay UE indicates in the message that the request is for relay one-to-one communication purposes. The eNB similar to rel-12 can

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chose to provide or not provide resources for relay communication.
- RAN2 will not define any layer-2 link establishment messages.

Not treated

R2-153461 Management of the PC5 link between the Relay UE and the Remote UE Ericsson discussion
R2-153731 Connection establishment for relay operation Qualcomm Incorporated discussion
R2-153788 Connection establishment of remote UE LG Electronics Inc. discussion

R2-153676 Authorization of out of coverage remote UEs for UE-to-Network relay Intel Corporation discussion
R2-153768 eNB involvement in remote UEs authorization and connection establishment ZTE discussion
R2-153803 Analysis on the Knowledge of Remote UE by eNB CATT discussion

Path switch

R2-153787 When to switch data transmission path LG Electronics Inc. discussion
R2-153822 Connection Establishment for UE-to-Network Relays INTERDIGITAL COMMUNICATIONS discussion
R2-153261 Simultaneous Uu and PC5 link and SRB DRB mapping PANASONIC R&D Center Germany discussion
R2-153767 Discussion on the traffic switch between Uu and PC5ZTE discussion

7.5.1.4 Other

Resource allocation, one-to-one communication, etc

Not treated

One-to-one communication

R2-153098 MAC PDU Addressing for Communication with UE-to-Network Relay Samsung Electronics Co., Ltd discussion
R2-153287 Support of one-to-one communication Intel Corporation discussion

R2-153404 Addressing for ProSe one-to-one communication Huawei, HiSilicon discussion
R2-153555 Potential solutions for one-to-one communication addressing General Dynamics UK Ltd discussion
R2-153682 Considerations on Layer-2 ID Collision CATT discussion
R2-153769 Considerations on the ProSe Layer-2 ID conflict issue ZTE discussion
Moved from 7.5.1.3
R2-153809 Layer-2 addressing for ProSe one-to-one communication ETRI discussion
R2-153681 Considerations on Layer-2 ID Collision CATT discussion
withdrawn

Resource allocation

R2-153100 Resource Allocation Aspects for UE-to-Network Relay Samsung Electronics Co., Ltd discussion
R2-153129 Resource Allocation for Remote UE Sony discussion
R2-153252 Discussion on radio resource allocation for ProSe UE-to-NW relayShenzhen Coolpad Technologies discussion

Other

R2-153235 Inter-frequency scenario and requirements for UE-Network relay Huawei, HiSilicon discussion
R2-153300 Public safety perspectives on GCSE_LTE latency requirements for evaluating UE-Network Relay solutions U.S. Department of Commerce discussion
R2-153827 NAS operation by remote UE LG Electronics Inc. discussion

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7.5.2 ProSe discovery in partial- and outside network coverage

RAN2 aspects of supporting out-of-coverage discovery

Incoming LS

R2-153009 LS on public safety discovery (R1-152422; contact: Qualcomm) RAN1 LS in Rel-13 LTE_eD2D_Prox
=> Noted

R2-153010 Reply LS to S3-151524 = on public safety discovery from SA3 (R1-153555; contact: Qualcomm) RAN1 LS in Rel-13 eProSe-Ext-SA3
=> RAN2 is happy with RAN1's response and doesn't need to reply to SA3
=> Noted

R2-153011 LS on Type 1 discovery for partial and outside network coverage (R1-153667; contact: Qualcomm) RAN1 LS in Rel-13 LTE_eD2D_Prox-Core
=> Noted

R2-153035 Reply LS to S2-150691 = R2-151011 on public safety discovery (S3-151524; contact: Qualcomm) SA3 LS in Rel-13 eProSe-Ext-SA3
=> No need to reply
=> Noted

R2-153025 LS reply to S3-151524 = R2-153035 on Public Safety discovery (S2-151813; contact: Qualcoomm) SA2 LS in Rel-13 eProSe-Ext-SA2TR
=> Noted

R2-153026 Reply LS to C1-151597 = R2-151021 on network feature support for ProSe Discovery (S2-152064; contact: Qualcomm) SA2 LS in Rel-12 ProSe
- TIM wonders what procedures we apply for the RAN sharing case, inter-frequency/inter-PLMN or intra-PLMN.
- TIM thinks that in the next meeting we should think of the RAN sharing case.

=> Noted

R2-153034 LS on ProSe coarse proximity estimation based on path loss (S2-152699; contact: T-Mobile) SA2 LS in Rel-13 eProSe
=> Noted

Not treated

R2-153286 Support of public safety discovery in partial- and out-of-coverage Intel Corporation discussion
R2-153596 Out of coverage discovery Ericsson discussion
R2-153599 Handling collisions between communication and discovery resources Ericsson discussion
R2-153742 Out-of-Coverage discovery for Public Safety Qualcomm Incorporated discussion

R2-153092 RAN2 Aspects of ProSe Discovery in Partial & OOC Samsung Electronics Co., Ltd discussion
R2-153592 Differentiation between PS discovery and non-PS discovery Ericsson discussion
R2-153665 Discussion on ProSe Discovery in Partial and Outside Network Coverage CATT discussion
R2-153771 RAN2 aspects of supporting out-of-coverage discovery ZTE discussion

7.5.3 ProSe discovery for inter-carrier and inter-PLMN

R2-153715 Inter carrier ProSe discovery Nokia Networks discussion

Proposal 1: Serving eNB is not mandated to provide discovery transmission resources for all carriers signalled in its SIB19.

- TIM wonders what this means for the UE, it has the read the SIB19 of the other carrier. Yes.

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Proposal 3: UE is allowed to only perform discovery transmission on carriers listed in SIB19.

- LG thinks that for PS services this restriction is not necessary. Samsung thinks that we already agreed to allow pre-configuration for PS and SIB19 for commercial.

=> Noted

R2-153242 Discovery transmission on inter-carriers of intra-PLMN and inter-PLMN discussion Huawei, HiSilicon

Proposal 1: The serving eNB should control if the served idle UEs are allowed to read discovery TX resource pools from the SIB19 of the inter-carrier cell (for both intra-PLMN and inter-PLMN).

- Ericsson wonders what is meant by control. Huawei indicates that it would be a broadcast signaling per carrier.
- Samsung thinks that the eNB needs to signal is whether the UE needs to read to SIB19 of the other carrier or if it needs to enter RRC connected mode to acquire the information.

=> Noted

Discussion:
Scenarios
1. Serving SIB19 provides discovery resources of carrier
2. If there is no serving dedicated resources broadcasted in SIB19 – if the UE is in idle and SIB 19 only provides the carrier information (Options)
   - **Option 1:** The UE always autonomously reads the SIB19 of the other carrier to acquire the information
   - **Option 2:** The UE always moves to connected to request resources
   - **Option 3**: both behaviors are allowed and the serving eNB indicates what the UE behavior is

- Ericsson, ZTE, Nokia Net, Coolpad have a preference for Option 1.
- Samsung, QC, would prefer option 3
- Huawei wonders if the UE can autonomously start transmitting on a carrier. Qualcomm thinks that if you don't want a UE to transmit on a given carrier the eNB shouldn't provide the frequency in the allowed list. Nokia Net agrees.

- CATT wonders what happens in the case that the SIB19 of the other carrier doesn't provide tx resources. Qualcomm thinks that it is important that the UE doesn't move to connected mode in the other PLMN. Qualcomm doesn't think that the UE should move to connected mode on the serving cell to request resources in this case. Samsung agrees.
- Huawei thinks the UE should move to connected mode to ask for resources for the serving PLMN. Ericsson thinks that if the eNB has the resources information then it can provide the information directly. Samsung and Qualcomm thinks that one possible use case for option 3 is for the case where only type 2B resources are configured by the network. LG thinks that we should allow the UE to move to connected and this should be controlled by the network.

=> We will send an LS to SA2 and CT1 informing them of RAN2 decisions

R2-153883 LS on Inter-PLMN sidelink discovery transmission Huawei LS out from RAN2 to: SA2 and CT1 Rel-13 LTE_eD2D_Prox-Core
[CB]

Agreements:
- Serving eNB is not mandated to provide discovery transmission resources for all carriers signalled in its SIB19.
- If SIB19 doesn't provide discovery transmission resources for the allowed carriers listed in the SIB19, the network can signal whether the UE should autonomously read the SIB19 of the signaled carrier or if the UE is expected to request resources from the serving cell for that carrier.
- The UE is not expected to connect to the other PLMN to perform discovery transmission. The UE should remain connected to the serving PLMN.
- If the UE autonomously reads SIB19 of the other carrier to acquire tx resources and that carrier doesn't provide discovery transmission resources in SIB19, the UE is not allowed to transmit on that

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carrier.

Not treated

R2-153586 Inter-PLMN coordination for discovery transmission TELECOM ITALIA S.p.A. discussion
R2-153594 Direct Discovery on non-PCell carriers Ericsson discussion

R2-153456 CN Impacts of inter-PLMN sidelink discovery transmission Huawei, HiSilicon discussion
R2-153848 Draft LS on inter-PLMN sidelink discovery transmission Huawei, HiSilicon LS out

R2-153094 Prioritisation Rule for Inter Carrier Discovery Transmission Samsung Electronics Co., Ltd discussion
R2-153091 Inter Carrier Discovery Samsung Electronics Co., Ltd discussion
R2-153093 Timing Synchronisation for Inter Carrier Discovery Transmission Samsung Electronics Co., Ltd discussion
R2-153095 Handling Power Limitation during Inter Carrier Discovery Transmission Samsung Electronics Co., Ltd discussion
R2-153097 Signaling Aspects of Gap for Discovery Transmission; Samsung Electronics Co., Ltd; discussion;
R2-153151 The uncoordinated and coordinated inter-PLMN ProSe discovery ITRI discussion
R2-153370 Possible issues in intra-PLMN and coordinated inter-PLMN Kyocera discussion
R2-153424 Carrier Prioritization for Type 1 Inter-Carrier Discovery ITRI discussion

R2-153668 LS on ProSe authorization for inter-PLMN CATT LS out
R2-153669 Discussion on Prose Authorization for Inter-PLMNCATT discussion
R2-153738 Draft LS on Intra-PLMN & Inter-PLMN D2D discovery Qualcomm Incorporated LS out

R2-153772 On ProSe Discovery for inter-frequency and inter-PLMN ZTE discussion
R2-153801 Inter-carrier and Inter-PLMN Discovery issues CATT discussion
R2-153824 Cell selection and measurements for non-PCel discovery LG Electronics Inc. discussion
R2-153825 Discovery on non-primary frequency LG Electronics Inc. discussion

Gaps

R2-153348 Sidelink gap details for direct discovery Kyocera discussion
=> Not treated
R2-153595 On D2D gaps Ericsson discussion
=> Not treated
R2-153753 Inter Frequency and Inter PLMN Discovery Qualcomm Incorporated discussion

Proposal 3: *Gaps introduced for discovery transmitter and reception should apply to both inter-frequency and intra-frequency cases.*

- LG wonders if the gap for intra- and inter- frequency would be the same or different gap. Qualcomm thinks that they can be different. LG wonders if this is a gap per frequency or one gap for all the frequency.
- Huawei wonders why this is needed for intra-frequency case, as this is legacy case. Qualcomm thinks that this is to improve the performance of discovery.

Proposal 4: *The ability of a UE to skip downlink reception and uplink transmission during discovery should be a separate capability.*

- Samsung and Ericsson doesn't think there is a need for a separate capability. The UE is requesting the gap so the eNB can figure it out. Qualcomm thinks that the UE is not necessarily always requesting a gap. Ericsson thinks that this depends on the final solution.

Proposal 6: *The gap created for discovery should take into account additional overhead.*

More particularly for intra-frequency discovery gap should include

- Ericsson wonders if this is the same interruption as Rel-12. Samsung thinks that the interruption should be left to RAN4.

Proposal 7:

If a UE is going to skip downlink reception and uplink transmission during inter-frequency discovery the UE can inform eNodeB of the resources on which it will participate in inter-frequency discovery.

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- Ericsson thinks that should also be applicable to intra-frequency. Qualcomm thinks that for intra-frequency the eNB knows what resources the UE is using so the UE doesn't need to provide this information.
- Huawei wonders if all UEs have to report the resources or the eNB triggers the reporting. Qualcomm thinks that it could be possible but one UE may not be enough.
- Samsung and Ericsson thinks that the gaps are separate for UL and DL.
- LG thinks that there could be signalling overhead if the UE has to request gaps for transmission in different frequencies.
- Telecom Italia wonder whether the gaps include only the subframes in which the UE intends to transmit or all the subframes in which it can transmit.

=> Noted

Agreements on gaps:
- Gaps introduced for discovery transmitter and reception should apply to both inter-frequency and intra-frequency cases for connected mode UEs
- eNodeB controls the gap configuration on a per UE basis
- The gap created for discovery should take into account additional overhead (for synchronization and subframe offset) and interruption time for retuning. The actual overhead and interruption time depends on RAN4 discussion.
- The UE can request gaps for discovery reception and/or transmissions. In the request the UE can inform the eNB of the subframes (corresponding of the timing of the serving cell) on which the UE needs gaps for transmission and/or reception. FFS on what the transmissions subframes correspond to (all allowed transmission subframes or the subframes in which the UE intends to transmit). FFS when the request is triggered.

7.5.4 Group priorities for ProSe communication

Mapping between the logical channel priority and LCG .

Solutions to address prioritization in case of autonomous resource selection (e.g. solutions other than static one-to-one association between priorities and resource pools).

Need/requirement for pre-emption.

Are multiple transmissions to different destination IDs allowed within one SA period?

Incoming LS

R2-153024 LS reply to R2-151789 on ProSe Priorities (S2-151810; contact: Intel) SA2 LS in Rel-13 LTE_eD2D_Prox-Core
=> Noted

R2-153030 LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (S2-152695; contact: Qualcomm) SA2 LS in Rel-13 eProSe-Ext-SA2
=> Noted

=> Respond to SA2 - Qualcomm
- Provide information on RAN2 agreements and answer the questions
- Ask SA2 to inform/confirm to RAN2 whether SA2 requires us to provide the PPP information and in what cases.

R2-153881 Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (R2-153030/S2-152695; contact: Qualcomm) Qualcomm LS out from RAN2 to: SA2 cc: RAN1 Rel-13 eProSe-Ext-SA2
[CB]

R2-153047 Reply LS reply to S2-151810=R2-153024 on ProSe Priorities (S1-152748; Contact: Qualcomm); SA1; LSin;
=> Not treated

R2-153480 Impact of PPP on user plane Ericsson discussion
Proposal 1 To implement PPP only changes to the PC5 interface are necessary.

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- Panasonic thinks that some additional information may be provided in the BSR. Ericsson clarifies that the intention here to make it clear that we don't have to make changes to the Uu.

Proposal 2 If a packet is prioritized on the PC5 interface, it should also be treated with some priority on the Uu interface (if a ProSe UE-to-Network relay is used).
Proposal 3 If a packet is prioritized on the Uu interface, it should also be treated with some priority on the PC5 interface (if a ProSe UE-to-Network relay is used).

Proposal 4 The sidelink logical channel prioritization serves channels in order of strict priority.
- Samsung thinks that the strict prioritization can be done across the same destination ID. Huawei thinks that logical channel is not the right terminology as now we have traffic priority.

Relay priority
Proposal 8 Encode PPP in User plane PDCP Data PDU.
- Qualcomm prefers static mapping of LCID to PPP or something configurable.
- Huawei thinks static configuration is not a good solution and configuring this mapping is a preferred option.
- LG thinks that static mapping is not possible, given the remaining space of LCID. Today we only have 9 remaining LCID and 8 priorities. LG further thinks that multiple services could have the same PPP. Huawei thinks that the configuration can be per cell
- Ericsson agrees and thinks that there should be flexibility. Intel thinks that the priority information is something that higher layers make use of and it would be simpler if the information is carried in the PDCP.
- CATT thinks that we should only respond to SA2. Intel thinks that we should respond to SA2 how we can provide the information.
- Intel thinks that the only case we need to provide information of priority from the transmitter to receiver is for the relay case. ALU wonders if the PPP info in PDCP would only be included for the relay case.
- Nokia Net wonders if the PPP information can be carried in the MAC. Ericsson thinks that using the MAC would result in a higher overhead. LG thinks that including in the MAC header is not a good idea as it includes multiple SDU different priority.
- ALU thinks that RAN1 is also discussing including the information in the SC. Chair indicates that the discussion is different the prioritization of each packet cannot be included.
- ZTE wonders if the PPP is only for the DL. Ericsson thinks it is for both.
- Huawei wonders why we don't include in the RLC PDU. Panasonic thinks that because we have segmentation in the RLC PDU there would more overhead.
- Huawei wonders how the relay UE would use the PPP information.
- Huawei thinks that we should capture that there is some overhead associated to the PDCP.

=> Noted

R2-153166 BSR and LCP supporting ProSe priorities LG Electronics Inc. discussion
Proposal2: Define LCG per ProSe group, and, within one ProSe group, each sidelink logical channel is mapped to one of four LCGs depending on the PPP of the sidelink logical channel

- Ericsson wonders what is the purposes of the different logical channel group. LG thinks that there can multiple priorities for each ProSe destination. Ericsson thinks that another way can be to provide the information directly using the LCID.
- Panasonic agrees with the proposals and thinks that we can use existing BSR format.
- Samsung wonders how the mapping is done.

Proposal3: When sending a SL BSR, the UE includes BS of all LCGs having SL data among all ProSe groups as many as it can. The BS of LCG having the sidelink logical channel with the highest PPP should be included first.

- Huawei thinks that the order is only important for truncated BSR. Ericsson agrees that the order doesn't matter. Ericsson sees a usefulness to have a priority in the truncated case.

=> Noted

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Not Treated

R2-153259 Multiple SA transmissions during one SC period PANASONIC R&D Center Germany discussion

R2-153295 Realizing off-network MCPTT priority and associated pre-emption on PC5 U.S. Department of Commerce discussion

R2-153628 Priority handling for ProSE Communication Alcatel-Lucent, Alcatel-Lucent Shanghai Bell discussion

Agreements

- To implement PPP only changes to the PC5 interface are necessary
- If a packet is prioritized on the PC5 interface, it should also be treated with some priority on the Uu interface (if a ProSe UE-to-Network relay is used).
- If a packet is prioritized on the Uu interface, it should also be treated with some priority on the PC5 interface (if a ProSe UE-to-Network relay is used).
- From RAN2 point of view a static mapping between LCID and PPP is not a feasible solution. The need to provide PPP information from the transmitter to the receiver is only for the relay case (if there is one at all). From a RAN2 point of view, the preferred solution is to provide PPP information is by including the information in the PDCP of the sidelink.

- Define LCG per ProSe destination and within one ProSe destination, each sidelink logical channel is mapped to one of four LCGs depending on the PPP of the sidelink logical channel. FFS how the mapping between LCGID and priority is determined.

- The same Rel-12 sidelink BSR format will be used as a baseline. When sending a SL BSR, the UE includes BS of all LCGs having SL data among all ProSe destinations as many as it can (relying on the truncation mechanism of Rel-12).

- FFS how the ProSe BSR is constructed (the order in which BS is provided for each LCGID)

- When the UE receives a SL grant, the UE selects the ProSe group having the sidelink logical channel with the highest PPP among the sidelink logical channels having SL data, and the serves all sidelink logical channels belonging the selected ProSe destination group in a decreasing priority order.

Relay Priority

Not treated

R2-153829 Prioritization of PC5-S LG Electronics Inc. discussion
Moved from 7.5.1.4

R2-153142 Consideration of bearer mapping for ProSe UE-to-Network Relays Kyocera Corporation discussion
Moved from 7.5.1.4

R2-153284 Considerations on relay UE operation for packet relaying Intel Corporation discussion
Moved from 7.5.1.4

R2-153575 QoS control in sidelink communications Beijing Xinwei Telecom Techn. Discussion
Moved from 7.5.1.4

R2-153770 Priority in UE-to-Network relay ZTE discussion
Moved from 7.5.1.4

R2-153805 Missing Packet due to Half-duplex in PC5 CATT discussion

R2-153806 Protocol Stacks for UE-to-Network Relay CATT discussion

R2-153101 ProSe Per-Packet Priority for DL traffic relayed by UE-to-Network relay Samsung Electronics Co., Ltd discussion

R2-153164 Bearer mapping in UE-Network Relay LG Electronics Inc. discussion

R2-153165 Providing PPP information to Relay UE LG Electronics Inc. discussion

R2-153743 Draft Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay Qualcomm Incorporated LS out

R2-153674 Reply LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay CATT LS out
Draft reply LS to the LS from SA2 (S2-152695) Rel-13 LTE_eD2D_Prox-Core
- moved from 7.5.5

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Priorities
Not treated

R2-153238 Priority handling based on ProSe Per Packet Priority Huawei, HiSilicon discussion
R2-153099 Priority Handling for D2D Communication Samsung Electronics Co., Ltd discussion
R2-153257 Buffer status reporting/priority handling for ProSe communication PANASONIC R&D Center Germany discussion
R2-153258 LCP procedure for ProSe communication PANASONIC R&D Center Germany discussion
R2-153260 Resource pool selection for the autonomous resource allocation mode PANASONIC R&D Center Germany discussion
R2-153285 Priority handling for UE autonomous resource selection Intel Corporation discussion
R2-153670 Priority for ProSe Communication CATT discussion
R2-153720 Prioritization of sidelink transmissions with pre-emption via resource pools SHARP discussion
R2-153729 Priority handling for Sidelink Direct Communication Qualcomm Incorporated discussion
R2-153739 Priorities and Pre-emption for D2D communications INTERDIGITAL COMMUNICATIONS discussion
R2-153741 Draft response LS on D2D priority handling Qualcomm Incorporated LS out
R2-153773 Issues on Priority Handling ZTE discussion
R2-153828 Support of pre-emption LG Electronics Inc. discussion
R2-153483 Floor control and pre-emption for MCPTT using ProSe Ericsson discussion
Moved from 7.5.5

7.5.5 Other

MCPTT related, etc

7.10 WI: RAN enhancements for extended DRX in LTE

(LTE_extDRX-Core; leading WG: RAN2; started: Mar. 15; target: Dec. 15; WID: RP-150493)

Time budget: 1 TU

Documents in this agenda item handled in the LTE Break Out session

7.10.1 eDRX for idle mode

Timer based vs. SFN based mechanism and other idle mode impacts

SFN vs. Timer based

R2-153108 SFN extension vs Timer based solution for extended Idle DRX cycle Fujitsu discussion
Clock drifting
- Sierra doesn't think that clock accuracy is a big issue. If we decide to extend the SIB we are adding an additional requirement for the UE to read the SIB. Ericsson agrees and with a proper design the clock drift can be minimal. Intel thinks that we could compensate the clock drift but given the potential large temperature variations then it could be more different. Additionally with a large TAU of 12 hrs we could see a drift as large as 3s. Qualcomm and Mediatek agrees that we can compensate however we have to keep in mind the use case of low cost UEs.
- Huawei thinks that clock drifting is not a big issue and the periodic updates with the MME can allow the UE to synchronize.
- Samsung thinks that we should introduce an extended SFN.
- Qualcomm thinks that we should stick to the existing requirements and not mandate stricter requirements for low cost devices.
- ZTE wonders if the clock drift is an issue for low cost devices only or smart phones as well. Qualcomm thinks that the current smart phones use normal DRX and don't go to deep sleep. Intel further thinks that even today with a 2.4s DRX the UEs may still read the SFN to re-synch.

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- Intel thinks that the solution should allow the UE to resynchronize without having to generate signalling.

=> Noted

R2-153620 Comparison of eDRX concepts for RRC idle mode Erisson discussion

=> Noted

R2-153697 Considerations on RAN based and CN based approaches for extended idle mode DRX QUALCOMM CDMA Technologies discussion

=> Not treated

R2-153291 Analysis of extending DRX cycle solutions for idle mode Intel Corporation discussion

- Qualcomm wonders if this solution requires a coordination between the MME and eNB. Intel agrees that some coordination will be required. Intel thinks that the only some corse synchronization is needed between the nodes. Ericsson thinks that there can be many MME connected and this would require the MMEs to be connected.
- Ericsson wonders who does the paging MME or eNB. Intel thinks that because the MME knows the eNB timing it knows when the UE is reachable and can page accordingly.
- LG wonders if from the UE perspective there is only one solution and what happens if the eNB doesn't broadcast a H-SFN number. Intel thinks that from the NAS level there would still be a timer.
- ALU wonders if the combined solution is within the decided SA2 endorsed solutions. Intel doesn't think that there is anything news. Qualcomm thinks that SA2 hasn't discussed any of the solutions and would have to re-discuss.

=> Noted

Discussions:

- Intel thinks that we can start by agreeing with the principle that the UE should be able to re-synchronize with the network without sending additional signaling (i.e. H-SFN or time clock broadcast information). Qualcomm agrees.
- Qualcomm thinks that the design should target minimizing wake up time.
- Ericsson want to have an understanding of the core network aspects and a discussion on the eNB impacts of storing paging. Intel and QC thinks we should focus on the radio access aspects. Mediatek thinks that storing of the paging should be avoided, but we can avoid this issue by some coordination with MME.
- ALU wonders how the repetition of the MME paging can be stopped. Qualcomm thinks that this can be done once we decide on the solution and we can send an LS to SA2.
- Ericsson thinks that SA2 discussed the eNB storing problem but didn't solve it. Qualcomm thinks that SA2 was aware of the problem.
- Ericsson thinks that with H-SFN solution, additional SA2 work may be required.
- ALU wonders how long the eNB would be required to store the paging message. Mediatek thinks that if we assume some lose synchronization then it could be up to 10s.
- Huawei thinks that we should analyse the power saving gains and core network aspects.

- Huawei thinks the H-SFN solution would require synchronization between eNBs and MMEs and we should avoid adding such requirements. Qualcomm doesn't think there is a requirement of sync between eNB and MME. It would be nice to have it and but is not required.
- Samsung wonders for the timer based solution how the UE and MME can start the reference timer at the same time. Huawei thinks that the timing doesn't have to be exact and we can compensate by having a larger window. Qualcomm and Intel thinks that this clearly results in the UE waking up for longer periods of time and therefore the power saving gains are lower. Huawei thinks that the larger window doesn't impact power saving of the UE. Qualcomm thinks that the main difference is that the eNB doesn't know exactly when the UE will wake up.
- Samsung thinks that timer based solution would be efficient for a very long time sleep time, but if we are considering lower sleep cycles then H-SFN would be more efficient. ALU thinks that we are designing for long DRX cycles. QC thinks we are designing that we are still design for cycle times lower than PSM.
- CATT thinks that the UE doesn't need to wake up during the full window.

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- Huawei thinks that in both solutions the UE has to wake up ahead of time. Qualcomm thinks that the difference is how much more in advance the UE has to wake up. The UE just has to re-synchronize the eNB but it cannot re-synchronize with the MME.
- Mediatek wonders if it is possible to avoid sending additional signalling to synchronize with the MME. Ericsson thinks that one possibility is to use SIB16.
- Nokia Net agrees that synchronization without UL signalling should be a baseline.
- Qualcomm thinks that objective of the WI is to have more power saving than PSM. With timer based this cannot be achieved.
- Huawei thinks that the UE has to do TAU anyways for both solutions. Qualcomm thinks that the TAU can be up to 24hrs. Verizon supports the proposal to optimize power saving.

=> To improve power saving gains, the UE should be able to re-synchronize over Uu with the RAN without sending uplink signalling (i.e. H-SFN or time clock broadcast information).

- Qualcomm thinks for the H-SFN based solution the wake up time is very clear, however for the time broadcast solution it is not clear when the UE wakes up.

=> From a RAN2 point of view it would be desirable to minimize or avoid storing paging messages in the RAN

After comeback
- Qualcomm thinks that the requirement on minimizing storing paging messages in the eNB can be address by a lose synchronization in the case of H-SFN and in the case of absolute timer then this can be easily done by the MME.
- Qualcomm thinks that with the broadcast mechanism the solution on when the UE wakes up hasn't been discussed yet.
- Ericsson thinks that a synchronization requirement is not desirable especially since the eNB can be connected to multiple MMEs.
- Huawei wonders how the synchronization can be done between the eNB and MME.
- Qualcomm thinks that given that now with both solutions we need to broadcast something, the H-SFN solution is simpler. Mediatek thinks that the answer is not very clear as the H-SFN is simpler but the absolute timer has the advantage that the UE doesn't have to synchronize often.
- NTT Docomo indicate that they have a preference to not have a tight synchronization, however some network don't have the absolute timer (GPS) available. Qualcomm indicates that if the network doesn't want to avoid storing then they can chose to not do it and therefore won't have to synchronize.
- Sierra Wireless thinks that they would have a preference for the H-SFN solution, since SIB acquisition would be easier, and would like to avoid reading large SIBs especially for LC MTC devices.

Agreements
- To improve power saving gains, the UE should be able to re-synchronize over Uu with the RAN without sending uplink signalling (i.e. H-SFN or time clock broadcast information).
- H-SFN based paging will be adopted in the RAN
- RAN2 has agreed that it would be desirable to minimize or avoid storing paging messages in eNB. To avoid storing of paging message would require the MME to have some awareness of approximate time of when the UE will become reachable. It is up to SA2 how this is achieved.
- For paging robustness purposes for mobile UEs, some lose H-SFN synchronization between cells may be required

=> Send an LS to SA2 and RAN3 (Qualcomm)
- clarify paging robustness and loose H-SFN synchronization
- provide overview of discussion

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R2-153853 Reply LS to S2-152698 extended connected mode DRX Qulacomm LS out from RAN2 to: SA2Rel-13 FS_eDRX
[CB]

=> Send an LS to RAN4 (Mediatek)
- Indicate for LTE range of connected mode eDRX up to 10.24s. For idle mode RAN2 has decided to extend the range past 10.24s in the order of minutes.
- Capture the intention that RAN2 doesn't not plan to do any mobility optimizations

R2-153882 LS on eDRX MediaTek Inc. LS out from RAN2 to: RAN4 Rel-13 LTE_extDRX-Core
[CB]

Email discussion

☒ **[91#32][LTE/eDRX] – eDRX aspects – Intel**
- Agree on an acceptable eDRX range and values for idle mode
- Agree on the range of H-SFN
- Discuss how to handle system information update
Deadline one week before contribution deadline

Not treated

R2-153224 Analysis on IDLE mode extended DRX cycle solutions Nokia Networks discussion

R2-153339 Extending DRX Cycle in Idle Mode HuaWei Technologies Co., Ltd discussion
R2-153437 How to apply the extended DRX in the idle mode *Samsung Telecommunications* discussion
R2-153700 Discussion on solutions for extended idle mode DRX Alcatel-Lucent, Alcatel-Lucent Shanghai Bell discussion
R2-153793 Hyper-SFN vs Timer based eDRX MediaTek Inc. discussion

Solutions/considerations

R2-153440 SI update in the extneded IDLE DRX Samsung Telecommunications discussion
R2-153240 Operator requirements for Idle-eDRX solution NTT DOCOMO INC. discussion
R2-153173 Paging Robustness for Extended Idle Mode DRX in LTE MediaTek Inc. discussion
R2-153250 Impacts on system change acquisition for eDRX LG Electronics Inc. discussion
R2-153385 Idle mode UE behaviour with Extended DRX Kyocera discussion
R2-153422 Some Design Needs for extended DRX cycle China Unicom discussion
R2-153432 On the length of eDRX in the Idle mode Samsung Telecommunications discussion
R2-153435 On the ETWS/CMAS support in Rel-13 eDRX Samsung Telecommunications discussion
R2-153442 Signalling for Rel-13 eDRX support Samsung Telecommunications discussion
R2-153680 Considerations for establishing a maximum idle mode eDRX time Sierra Wireless, S.A. discussion
R2-153684 Considerations for Paging Occasion Change Indication in eDRX Sierra Wireless, S.A. discussion
R2-153735 Design Aspects of IDLE Mode eDRX INTERDIGITAL COMMUNICATIONS discussion

Measurements and cell reselecetion

R2-153083 Extended DRX impact on idle mode UE measurement and cell reselection Acer Incorporated discussion
R2-153124 UE preferred eDRX behaviour Sony discussion

Withdrawn

R2-153214 Impacts on system change acquisition for eDRX LG Electronics Inc. discussion
R2-153225 Analysis on IDLE mode extended DRX cycle solutions Nokia Networks discussion
Late

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7.10.2 eDRX for connected mode

RAN2 issues related to extending DRX up to 10.24s in connected mode.

Note: RAN-68 agreed that extended connected mode DRX cycle beyond 10.24 seconds is no longer pursued in this WI

Not treated

R2-153427 How to apply the extended DRX in the connected mode Samsung Telecommunications discussion
R2-153836 Extended DRX in connected mode QUALCOMM CDMA Technologies discussion

R2-153085 RLF prevention without mobility enhancement for Connected Mode eDRX Acer Incorporated discussion
R2-153172 Remaining Issues for Extended Connected Mode DRX in LTE MediaTek Inc. discussion
R2-153174 [DRAFT] LS on extended connected mode DRX MediaTek Inc. LS out
R2-153341 Extending DRX Cycle in Connected Mode HuaWei Technologies Co., Ltd discussion
R2-153576 the issues on the C-eDRX Beijing Xinwei Telecom Techn. Discussion

Summary of the break-out session (ProSe) meeting

Agreed in principle CRs

None

Agreed outgoing LS

None

Comeback on Friday

R2-153881 Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (R2-153030/S2-152695; contact: Qualcomm) Qualcomm LS out from RAN2 to: SA2 cc: RAN1 Rel-13 eProSe-Ext-SA2

R2-153883 LS on Inter-PLMN sidelink discovery transmission Huawei LS out from RAN2 to: SA2 and CT1 Rel-13 LTE_eD2D_Prox-Core

R2-153853 Reply LS to S2-152698 extended connected mode DRX Qulacomm LS out from RAN2 to: SA2Rel-13 FS_eDRX
R2-153882 LS on eDRX MediaTek Inc. LS out from RAN2 to: RAN4 Rel-13 LTE_extDRX-Core

Discuss/agree whether we should send an LS to RAN4

✉ **[91#07][LTE/eD2D] – LS to RAN4**
- Agree on LS to RAN4 notifying them of RAN2 agreements related to gaps for inter-frequency/inter-PLMN discovery
- Deadline – one week after the meeting

E-mail discussion for the next meeting

✉ **[91#16][LTE/eD2D] - Running stage 2 CRs**
- Capture agreements on eD2D up to RAN2#91
- Outcome: endorse the running stage CR
- Deadline: 2 weeks after the meeting

✉ **[91#31][LTE/D2D] – Relay selection and reselection - Qualcomm**

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- Define relay selection/reselection terminology
- Define the detailed criteria to select a new relay and whether/how to perform the ranking of relays
- **Deadline** – 2 stages
  1. Sept. 11 - Company opinions provided
  2. Sept. 18 - Rapporteur provides way forward

✉ **[91#32][LTE/eDRX] – eDRX aspects – Intel**
- Agree on an acceptable eDRX range and values for idle mode
- Agree on the range of H-SFN
- Discuss how to handle system information update

Deadline one week before contribution deadline

Comeback at the next meeting

None

Summary of Agreements on Rel-13 ProSe

ProSe enhancements

UE-to-NW Relays

Relay UE initiation
- A sidelink discovery resource pool specific for at least relay discovery will be defined. FFS if the pool is for only relay operation or other PS discovery services can use the pool. FFS whether this pool is used by both remote UE and relay UEs or only relay UEs.
- If the eNB doesn't broadcast any information associated to relay operation then relay operation is not supported.
- The reception pools for relay discovery are provided by broadcast signalling.
- The eNB can broadcast that relay operation is supported and broadcasts tx resource pool(s) for relay discovery. The eNB may broadcast a minimum and/or a maximum Uu link quality (RSRP/RSRQ) thresholds that UEs need to respect to autonomously start/stop the relay discovery procedure using the broadcasted information. The network has the option to configure none, one or both thresholds. FFS if the eNB can control the UEs on an individual basis if it is broadcasting relay discovery resources. FFS if a UE in connected mode can use the broadcast relay discovery resources.
- The eNB can broadcast that relay operation is supported and but does not broadcast a tx resource pool for relay discovery. In this case the UE can initiate a request for relay discovery resources, by dedicated signalling and the eNB can configure the UE to become a relay by dedicated signalling. FFS if the eNB can optionally broadcast a minimum and/or a maximum Uu link quality (RSRP/RSRQ) thresholds that UEs need to respect to before requesting tx relay discovery resources and if a differentiation of behavior between Model A and Model B.
- If Relay UEs are initiated by broadcast signaling, they can also perform relay discovery when in idle. If Relay UEs are initiated by dedicated signaling, they can perform relay discovery as long as they are in connected mode.

Relay discovery for in-coverage remote UE
- UEs can transmit relay discovery solicitation messages while in RRC Connected and RRC idle (if network configured)
- A remote UE may only transmit discovery solicitation messages if the Uu link quality at the UE is below an optional network configured threshold.

Relay Selection/re-selection for in-coverage remote UE
- An in-coverage remote UE performs relay selection (using the same selection criteria as out-of-coverage)

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- In connected mode, after selecting a relay, the remote UE informs the eNB using the *UESidelinkInformation* similar to Rel-12. The remote UE indicates in the message that the request is for relay one-to-one communication purposes. The eNB similar to rel-12 can chose to provide or not provide resources for relay communication.

Relay selection/reselection for all remote UEs

- No other RAN2-specified criteria, except radio link quality, shall be considered for relay UE selection/re-selection.
- A relay UE is considered as suitable if the PC5 link quality exceeds a configured signal strength threshold.
- The detailed criteria to select a new relay and the ranking of relays is FFS.
- The remote UE can also trigger a selection of a new relay when it receives a release message from the relay UE (as defined by SA2).

Connection establishment

- Authorization of remote UEs is done by higher layers
- A relay UE performing relay communication has to be in RRC connected mode.
- After receiving a layer-2 link establishment request from a remote UE, the relay UE informs the eNB using *UESidelinkInformation*. The relay UE indicates in the message that the request is for relay one-to-one communication purposes. The eNB similar to rel-12 can chose to provide or not provide resources for relay communication.
- RAN2 will not define any layer-2 link establishment messages.

ProSe discovery for inter-carrier and inter-PLMN

- Serving eNB is not mandated to provide discovery transmission resources for all carriers signalled in its SIB19.
- If SIB19 doesn't provide discovery transmission resources for the allowed carriers listed in the SIB19, the network can signal whether the UE should autonomously read the SIB19 of the signaled carrier or if the UE is expected to request resources from the serving cell for that carrier.
- The UE is not expected to connect to the other PLMN to perform discovery transmission. The UE should remain connected to the serving PLMN.
- If the UE autonomously reads SIB19 of the other carrier to acquire tx resources and that carrier doesn't provide discovery transmission resources in SIB19, the UE is not allowed to transmit on that carrier.

Gaps

- Gaps introduced for discovery transmitter and reception should apply to both inter-frequency and intra-frequency cases for connected mode UEs
- eNodeB controls the gap configuration on a per UE basis
- The gap created for discovery should take into account additional overhead (for synchronization and subframe offset) and interruption time for retuning. The actual overhead and interruption time depends on RAN4 discussion.
- The UE can request gaps for discovery reception and/or transmissions. In the request the UE can inform the eNB of the subframes (corresponding of the timing of the serving cell) on which the UE needs gaps for transmission and/or reception. FFS on what the transmissions subframes correspond to (all allowed transmission subframes or the subframes in which the UE intends to transmit). FFS when the request is triggered.

Group priorities for ProSe communication

- To implement PPP only changes to the PC5 interface are necessary
- If a packet is prioritized on the PC5 interface, it should also be treated with some priority on the Uu interface (if a ProSe UE-to-Network relay is used).
- If a packet is prioritized on the Uu interface, it should also be treated with some priority on the PC5 interface (if a ProSe UE-to-Network relay is used).

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- From RAN2 point of view a static mapping between LCID and PPP is not a feasible solution. The need to provide PPP information from the transmitter to the receiver is only for the relay case (if there is one at all). From a RAN2 point of view, the preferred solution is to provide PPP information is by including the information in the PDCP of the sidelink.

- Define LCG per ProSe destination and within one ProSe destination, each sidelink logical channel is mapped to one of four LCGs depending on the PPP of the sidelink logical channel. FFS how the mapping between LCGID and priority is determined.

- The same Rel-12 sidelink BSR format will be used as a baseline. When sending a SL BSR, the UE includes BS of all LCGs having SL data among all ProSe destinations as many as it can (relying on the truncation mechanism of Rel-12).

- FFS how the ProSe BSR is constructed (the order in which BS is provided for each LCGID)

- When the UE receives a SL grant, the UE selects the ProSe group having the sidelink logical channel with the highest PPP among the sidelink logical channels having SL data, and the serves all sidelink logical channels belonging the selected ProSe destination group in a decreasing priority order.

RAN enhancements for extended DRX in LTE

- To improve power saving gains, the UE should be able to re-synchronize over Uu with the RAN without sending uplink signalling (i.e. H-SFN or time clock broadcast information).
- H-SFN based paging will be adopted in the RAN
- RAN2 has agreed that it would be desirable to minimize or avoid storing paging messages in eNB. To avoid storing of paging message would require the MME to have some awareness of approximate time of when the UE will become reachable. It is up to SA2 how this is achieved.
- For paging robustness purposes for mobile UEs, some lose H-SFN synchronization between cells may be required

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Annex I:
History

Document history		
Date	**TSG RAN WG2 Tdoc**	**Subject**
13.08.2015	-	Skeleton report for RAN WG2 #91 provided before the meeting.
19.08.2015	-	First update of skeleton report for RAN WG2 #91 provided before the meeting
31.08.2015	-	Draft report v0.1 of RAN WG2 #91 provided after RAN WG2 #91
25.09.2015	R2-154002	Draft report v1.0 of RAN WG2 #91 provided after RAN WG2 #91
08.10.2015	R2-154031	Draft report v2.0 of RAN WG2 #91 provided after RAN WG2 #91
09.10.2015	R2-154032	Report v3.0 of RAN WG2 #91 provided after RAN WG2 #91

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
x	x	Yes, No	withdrawn, not treated, noted, revised, endorsed, agreed, postponed	Late: request/ submission after 15.08.15 9:00am CEST	R2-15xxxx	-	-	agenda, report, LS in, LS out, CR, pCR (text proposal), draftCR (running CR), draft TR (technical report), draft TS (technical specification), Discussion, other			for CRs: CR number allocation for LSs: linking between Tdocs				-	acronym	-	especially for problems in the Tdoc allocation	
02.1	General: Approval of the agenda	Yes	agreed		R2-153001	Proposed agenda for RAN2 #91 Beijing, China, 24.8.-28.8.2015	Ericsson (RAN2 chairman)	agenda							-	-			
02.2	General: Approval of the report of the previous meeting	Yes	revised		R2-153002	Draft report of RAN2 RAN2 #90, Fukuoka, Japan, 25.05.-29.05.2015	ETSI MCC	report							-	-	R2-152029, R2-153059		
02.4	General: Others	Yes	not treated	Late	R2-153003	3GPP TSG RAN WG2 compendium v28.0 (status after RAN #68)	ETSI Secretariat	other							-	-			
03.2	LSin: LTE relevance	Yes	noted		R2-153004	Reply LS to S2-151423 = R2-151027 on proposed method of restricting access to IOPS cells (C1-152403; contact: AT&T)	CT1	LS in						no reply answer	Rel-13	FS_IOPS_St2	S2-151423		
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	noted		R2-153005	Reply LS to S1-151622 = R2-151029 on handling of uncategorised applications in ACDC (C1-152413; contact: Qualcomm)	CT1	LS in						no reply answer	Rel-13	ACDC-CT	C1-152413	moved from 3.2 to 5.1	
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-153006	LS on Efficient Small Data Transfer (GP-150654; contact: Ericsson)	GERAN2	LS in						no reply answer	Rel-13	FS_IoT_LC	GP-150654		
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted		R2-153007	Reply to LS to S3-151418 = R2-152017 on C-IoT/MTC data transmission targets for security-related procedures (GP-150669; contact: Vodafone)	GERAN	LS in						no reply answer	Rel-13	FS_BEST_MTC_Sec	GP-150669	moved from 3.2 to 7.4.1	
03.1	LSin: Joint UMTS/LTE relevance	Yes	postponed		R2-153008	Explicit Congestion Notification for Lower Layer Protocols Submission (IETF LS; contact: EMC)	IETF	LS in						no reply answer					
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-153009	LS on public safety discovery (R1-152422; contact: Qualcomm)	RAN1	LS in						no reply answer	Rel-13	LTE_eD2D_Prox	R1-152422	moved from 3.2 to 7.5.2	LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-153010	Reply LS to S3-151524 = on public safety discovery from SA3 (R1-153555; contact: Qualcomm)	RAN1	LS in						no reply answer	Rel-13	eProSe-Ext-SA3	R1-153555	moved from 3.2 to 7.5.2	LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-153011	LS on Type 1 discovery for partial and outside network coverage (R1-153667; contact: Qualcomm)	RAN1	LS in						no reply answer	Rel-13	LTE_eD2D_Prox-Core	R1-153667	moved from 3.2 to 7.5.2	LTE breakouts
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	noted		R2-153012	LS on RAN1 agreements on CA Enhancement Beyond 5 Carriers (R1-153672; contact: Nokia Networks)	RAN1	LS in						no reply answer	Rel-13	LTE_CA_enh_b5C-Core	R1-153672	moved from 3.2 to 7.2.1	
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	noted		R2-153013	LS on RAN1 Multiflow 3F-4C agreements (R1-153694; contact: Nokia Networks)	RAN1	LS in						no reply answer	Rel-13	HSDPA_MFTX_enh-Core	R1-153694	moved from 3.3 to 11.5	UMTS
03.2	LSin: LTE relevance	Yes	noted		R2-153014	Response LS to S2-150698 = R2-150027 on Paging Optimisation (R3-151280; contact: Ericsson)	RAN3	LS in						no reply answer	Rel-13	TEI13	R3-151280		
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted		R2-153015	Response LS to R2-151786 on Paging for MTC (R3-151311; contact: Alcatel Lucent)	RAN3	LS in						final reply LS provided in R2-153966	Rel-13	LTE_MTCe2_L1	R3-151311, R2-153966	moved from 3.2 to 7.4.1	
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	noted		R2-153016	LS on RAN Sharing Enhancements for LTE (R3-151316; contact: Nokia Networks)	RAN3	LS in						final reply LS provided in R2-153911	Rel-13	RSE-RAN_LTE-Core	R3-151316, R2-153911	moved from 3.2 to 7.12	
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	noted		R2-153017	LS on overload of MME resouce quotas in RAN sharing scenarios (R3-151317; contact: Alcatel Lucent)	RAN3	LS in						no reply answer	Rel-13	RSE-RAN_LTE-Core	R3-151317	moved from 3.2 to 7.12	
11.06	UTRA Rel-13: WI: HSPA Dual-Band UL carrier aggregation	Yes	noted		R2-153018	LS to RAN2 on HSPA DB UL CA agreements (R4-153782; contact: Qualcomm)	RAN4	LS in						no reply answer			R4-153782	moved from 3.3 to 11.6	UMTS
06.02.08	LTE: Rel-12: WI: FDD/TDD Carrier Aggregation	Yes	noted		R2-153019	LS Out on TDD + FDD dual UL UE behavior (R4-153889; contact: Ericsson)	RAN4	LS in						no reply answer	Rel-13		R4-153889	moved from 3.2 to 6.2.8	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153020	LS regarding rank3/4 in TM3 and TM4 for additional UE categories (R4-153907; contact: Nokia Networks)	RAN4	LS in						no reply answer	Rel-13	LTE_4Rx_AP_DL-Core	R4-153907	moved from 3.1 to 6.1.1	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted		R2-153021	LS response to R1-150919 = R2-151007 on measurement performance for MTC (R4-153909; contact: Ericsson)	RAN4	LS in						no reply answer	Rel-13	LTE_MTCe2_L1-Core	R4-153909	moved from 3.2 to 7.4.1	
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-153022	Reply LS to R2-150703 on LTE Rel-12 UE feature list (RP-151105; contact: NTT DOCOMO)	RAN	LS in						no reply answer	Rel-12		RP-151105		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153023	LS response regarding rank3/4 in TM3 and TM4 for additional UE categories (RP-151113; contact: Nokia Networks)	RAN	LS in						no reply answer	Rel-13	LTE_4Rx_AP_DL-Core	RP-151113	moved from 3.1 to 6.1.1	
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-153024	LS reply to R2-151789 on ProSe Priorities (S2-151810; contact: Intel)	SA2	LS in						no reply answer	Rel-13	LTE_eD2D_Prox-Core	S2-151810	moved from 3.2 to 7.5.4	LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-153025	LS reply to S3-151524 = R2-153035 on Public Safety discovery (S2-151813; contact: Qualcomm)	SA2	LS in						no reply answer	Rel-13	eProSe-Ext-SA2TR	S2-151813	moved from 3.2 to 7.5.2	LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-153026	Reply LS to C1-151597 = R2-151021 on network feature support for ProSe Discovery (S2-152064; contact: Qualcomm)	SA2	LS in						no reply answer	Rel-12	ProSe	S2-152064	moved from 3.2 to 7.5.2	LTE breakouts

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-153027	Reply LS to S2-151654 on requested feedback on TR 26.924 (S2-152081; contact: Ericsson)	SA2	LS in						no reply answer	Rel-13	QOSE2EMTSI	S2-152081		
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	postponed		R2-153028	LS on UE Handling of RAN Rules for WLAN Interworking (S2-152686; contact: Qualcomm)	SA2	LS in						reply LS postponed	Rel-12	TEI12	S2-152686	moved from 3.1 to 4.2	
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	noted		R2-153029	Reply LS to R3-151317 = R2-153017 on overload of MME resource quotas in RAN sharing scenarios (S2-152692; contact: Alcatel Lucent)	SA2	LS in						no reply answer	Rel-13	RSE-RAN_LTE-Core	S2-152692	moved from 3.2 to 7.12	
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-153030	LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (S2-152695; contact: Qualcomm)	SA2	LS in						final reply LS provided in R2-153887	Rel-13	eProSe-Ext-SA2	S2-152695, R2-153887	moved from 3.2 to 7.5.4	LTE breakouts
03.2	LSin: LTE relevance	Yes	noted		R2-153031	Reply LS to R3-151280 = R2-153014 on Paging Optimisation (S2-152696; contact: Alcatel Lucent)	SA2	LS in							Rel-13	TEI13	S2-152696		
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-153032	LS on paging co-ordination for extended idle mode DRX (S2-152697; contact: Qualcomm)	SA2	LS in						final reply LS provided in R2-153914	Rel-13	eDRX	S2-152697, R2-153914		
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-153033	LS on extended connected mode DRX (S2-152698; contact: Qualcomm)	SA2	LS in						no reply answer	Rel-13	FS_eDRX	S2-152698		
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-153034	LS on ProSe coarse proximity estimation based on path loss (S2-152699; contact: T-Mobile)	SA2	LS in						no reply answer	Rel-13	eProSe	S2-152699	moved from 3.2 to 7.5.2	LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-153035	Reply LS to S2-150691 = R2-151011 on public safety discovery (S3-151524; contact: Qualcomm)	SA3	LS in							Rel-13	eProSe-Ext-SA3	S3-151524	moved from 3.2 to 7.5.2	LTE breakouts
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-153036	LS on bitrate variations and handling in RAN (S4-150866; contact: Ericsson)	SA4	LS in						final reply LS provided in R2-153916	Rel-13	QOSE2EMTSI	S4-150866, R2-153916		
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-153037	Reply LS to R2-150598 and R2-151734 on EVS over UTRAN (S4-150870; contact: Ericsson)	SA4	LS in						final reply LS provided in R2-153904	Rel-13	EVSoCS	S4-150870, R2-153904	moved from 3.3 to 11.3; noted at Joint RAN1 and RAN2 EVS session	UMTS
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-153038	LS on update on Cooperation for Energy Efficiency Measurements (S5-153359; contact: Nokia Networks)	SA5	LS in							Rel-13	OAM-PM_EE	S5-153359		
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted	Late	R2-153039	Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C1-153239; contact: Qualcomm)	CT1	LS in						cc: RAN2	Rel-13	EVSoCS	C1-153239, R2-153037	moved from 3.3 to 11.3; noted at Joint RAN1 and RAN2 EVS session	UMTS
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted	Late	R2-153040	Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C3-153456; contact: Qualcomm)	CT3	LS in						cc: RAN2	Rel-13	EVSoCS	C3-153456, R2-153037	moved from 3.3 to 11.3; noted at Joint RAN1 and RAN2 EVS session	UMTS
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	postponed	Late	R2-153041	LS on ACDC mechanism (C1-153278; contact: LGE)	CT1	LS in							Rel-13	ACDC-CT, ACDC-RAN	C1-153278	moved from 3.2 to 5.1	
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted	Late	R2-153042	LS on Completion of Study Item on Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things (FS_IoT_LC) (GP-151041; contact: Vodafone)	GERAN	LS in						cc: RAN2; no reply answer	Rel-13	FS_IoT_LC	GP-151041		
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted	Late	R2-153043	Reply LS to S4-150870 = R2-153037 on EVS over UTRAN (C4-151290; contact: Ericsson)	CT4	LS in							Rel-13	EVSoCS	C4-151290, R2-153037	noted at Joint RAN1 and RAN2 EVS session	UMTS
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	noted	Late	R2-153044	Reply LS to C1-152413 = R2-153005 on ACDC requirements (S1-152406; contact: LGE)	SA1	LS in						final reply LS provided in R2-153876	Rel-13	ACDC-CT	S1- 152406, R2-153905, R2-153876		
06.01.02	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: UP	Yes	noted	Late	R2-153045	Reply LS to R2-152838 on Type 2 Power Headroom reporting (R1-154764; contact: Intel)	RAN1	LS in						to: RAN2	Rel-10	LTE_CA-Core	R1-154764, R2-152838	moved from 3.2 to 6.1.2; LS treated in LTE UP session	LTE UP
03.2	LSin: LTE relevance	Yes	noted	Late	R2-153046	Response LS to S2-151423 = R2-151027 on proposed method of restricting access to IOPS cells (S1-152750; contact: Applied Communication Sciences)	SA1	LS in						cc: RAN2	Rel-13	FS_IOPS_SI2	S1-152750, R2-151027		
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted	Late	R2-153047	Reply LS to S2-151810 = R2-153024 on ProSe Priorities (S1-152748; contact: Qualcomm)	SA1	LS in						to: RAN2; no reply answer	Rel-13	LTE_eD2D_Prox-Core	S1-152748, R2-153024		LTE breakouts
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted	Late	R2-153048	Reply LS on 2 UL inter-band CA protection of GNSS (R4-154064; contact: NTT DOCOMO)	RAN4	LS in						to: RAN2	Rel-11	LTE_CA_2UL	R4-154064		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted	Late	R2-153049	Reply LS to R2-152856 on NS values in system information broadcast (R4-155258; contact: Ericsson)	RAN4	LS in						to: RAN2	REL-9	TEI9	R4-155258, R2-152856		
06.02.08	LTE: Rel-12: WI: FDD/TDD Carrier Aggregation	Yes	noted	Late	R2-153050	Reply LS to R4-153889 = R2-153019 on TDD + FDD dual UL UE behavior (R1-154905; contact: Qualcomm)	RAN1	LS in						cc: RAN2; no reply answer	Rel-13		R1-154905, R2-153019	moved from 3.2 to 6.2.8	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted	Late	R2-153051	LS response to R1-150919 = R2-151007 on measurement performance for Rel-13-MTC (R4-155112; contact: Ericsson)	RAN4	LS in						cc: RAN2; no reply answer	Rel-13	LTE_MTCe2_L1-Core	R4-155112, R2-151007	moved from 3.2 to 7.4.1	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted	Late	R2-153052	Reply LS to R1-150920 = R2-151008 on PRACH coverage enhancement (R4-155113; contact: Huawei)	RAN4	LS in						cc: RAN2; no reply answer	Rel-13	LTE_MTCe2_L1-Core	R4-155113, R2-151008	moved from 3.2 to 7.4.1	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted	Late	R2-153053	Reply LS to R1-145455 on the maximum power of the new UE power class for MTC (R4-155349; contact: Ericsson)	RAN4	LS in						cc: RAN2; no reply answer	Rel-13	LTE_MTCe2_L1-Core	R4-155349	moved from 3.2 to 7.4.1	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted	Late	R2-153054	LS reply to R2-152914 on measurements cell selection and reselection for MTC LC/EC (R4-155119; contact: Nokia Networks)	RAN4	LS in						to: RAN2; no reply answer	Rel-13	LTE_MTCe2_L1-Core	R4-155119, R2-152914	moved from 3.2 to 7.4.1	
		No			R2-153055	Void													
		No			R2-153055	Void													
		No			R2-153055	Void													
02.4	General: Others	Yes	not treated		R2-153058	RAN WG2 chairman and vice chairmens elections	ETSI MCC	other											

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02.2	General: Approval of the report of the previous meeting	Yes	revised		R2-153059	Draft report of RAN2 RAN2 #90, Fukuoka, Japan, 25.05.-29.05.2015	ETSI MCC	report									R2-153060		
02.2	General: Approval of the report of the previous meeting	Yes	agreed		R2-153060	Report of RAN2 RAN2 #90, Fukuoka, Japan, 25.05.-29.05.2015	ETSI MCC	report									R2-153059		
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	No	withdrawn		R2-153061	test	ETSI	CR	36.331	12.6.0			F		Rel-12	LTE_D2D_Prox-Core			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	No	withdrawn		R2-153062	test	ETSI	CR	36.331	12.6.0	1854		F		Rel-12	LTE_D2D_Prox-Core			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	No	withdrawn		R2-153063	test	ETSI	CR	36.331	12.6.0	1855		F		Rel-12	LTE_D2D_Prox-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153064	Remove support of additionalSpectrumEmissionPCell	HTC Corporation	CR	36.306	10.13.0	0285		F		Rel-10	LTE_CA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153065	Remove support of additionalSpectrumEmissionPCell	HTC Corporation	CR	36.306	11.11.0	0286		A		Rel-11	LTE_CA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153066	Remove support of additionalSpectrumEmissionPCell	HTC Corporation	CR	36.306	12.5.0	0287		A		Rel-12	LTE_CA-Core			
02.4	General: Others	Yes	not treated		R2-153067	Tutorial for use of the 3G Ultimate Tdoc allocation tools	ETSI MCC	other											
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153068	MTC cell re-selection and mobility implications	Gemalto N.V.	discussion							Rel-13	LTE_MTCe2_L1-Core		moved from 7.4.2 to 7.4.5	
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	not treated		R2-153069	UTRA/E-UTRA Protocol aspects of Indoor positioning enhancements using hybrid Wi-Fi/BT and barometric sensors	Apple Europe Limited	discussion							Rel-13	FS_UTRA_LTE_iPos_enh		Some Tdoc info missed	
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153070	Some considerations for network-controlled LTE-WLAN radio level interworking	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153071	Control plane design for LTE-WLAN radio level integration	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	noted		R2-153072	Interaction between RAN rules and Local Operating Environment Information	MediaTek Inc.	discussion							Rel-12	UTRA_LTE_WLAN_interw-Core		Tdoc info missed	
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	noted		R2-153073	Remaining aspects on the Multiflow 3F-4C configuration	Nokia Networks	discussion							Rel-13	HSDPA_MFTX_enh-Core		Tdoc type corrected	UMTS
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	revised		R2-153074	Introduction of the Multiflow 3F-4C configuration	Nokia Networks	CR	25.302	12.1.0	0237		B		Rel-13	HSDPA_MFTX_enh-Core	R2-153894		UMTS
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	agreed		R2-153075	Introduction of the Multiflow 3F-4C configuration	Nokia Networks	CR	25.321	12.2.0	0810		B		Rel-13	HSDPA_MFTX_enh-Core			UMTS
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	revised		R2-153076	Introduction of the Multiflow 3F-4C configuration	Nokia Networks	CR	25.331	12.6.0	5776		B		Rel-13	HSDPA_MFTX_enh-Core	R2-153891		UMTS
10.7	UTRA Rel-12: Other UMTS Rel-12 WI/SIs	Yes	noted		R2-153077	Simultaneous reconfiguration and active set update procedures	Nokia Networks	discussion							Rel-12	TEI12		Tdoc type corrected	UMTS
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated	Late	R2-153078	Mobility handling for LTE-WLAN aggregation	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated	Late	R2-153079	LTE handover during LTE-WLAN aggregation	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated	Late	R2-153080	WLAN Activation/Deact during LTE-WLAN aggregation	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated	Late	R2-153081	Handling of WLAN UE Capability & User Preferences	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core		moved from 7.6.4 to 7.6.2.1	
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated	Late	R2-153082	Inactivity reporting in enhanced LTE-WLAN interworking	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153083	Extended DRX impact on idle mode UE measurement and cell reselection	Acer Incorpoated	discussion							Rel-13	LTE_extIDRX-Core			LTE breakouts
11.08	UTRA Rel-13: UMTS TEI13 enhancements	Yes	noted		R2-153084	Multi-carrier HSUPA with CS	Nokia Networks	discussion							Rel-13	TEI13		Tdoc type corrected	UMTS
07.10.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-153085	RLF prevention without mobility enhancement for Connected Mode eDRX	Acer Incorpoated	discussion							Rel-13	LTE_extIDRX-Core			LTE breakouts
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	No	withdrawn		R2-153086	User plane related issues for LTE-WLAN aggregation	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	No	withdrawn		R2-153087	Discussion on ways to get service when ACDC is applied on a cell	HTC Corporation	discussion							Rel-13	ACDC-RAN-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153088	Further discussion on PDCP discard with split bearers	Nokia Networks	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153089	Stage 3 Details of DC Enhancements	Nokia Networks	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153090	Transmission of PDCP status report at PDCP data recovery	Nokia Networks	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153091	Inter Carrier Discovery	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153092	RAN2 Aspects of ProSe Discovery in Partial & OOC	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153093	Timing Synchronisation for Inter Carrier Discovery Transmission	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153094	Prioritisation Rule for Inter Carrier Discovery Transmission	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153095	Handling Power Limitation during Inter Carrier Discovery Transmission	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	revised		R2-153096	Signaling Aspects of Gap for Discovery Reception	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core	R2-153850		LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153097	Signaling Aspects of Gap for Discovery Transmission	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153098	MAC PDU Addressing for Communication with UE-to-Network Relay	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153099	Priority Handling for D2D Communication	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153100	Resource Allocation Aspects for UE-to-Network Relay	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153101	ProSe Per-Packet Priority for DL traffic relayed by UE-to-Network relay	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-153102	Solution to reduce CA capability signalling size for B5C	NTT DOCOMO, INC.	discussion							Rel-13	LTE_CA_enh_b5C-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153103	Interpretation of intra-band non-contiguous CA capability	NTT DOCOMO, INC., Samsung	discussion							Rel-10	LTE_CA-Core			

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07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153104	Architecture and protocol details for LWA	Fujitsu	discussion							Rel-13	LTE_WLAN_radio-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153105	Cell-specific probability setting	Fujitsu	discussion							Rel-13	LTE_MC_load-Core			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153106	Considerations on trigger condition for relay reselection	Fujitsu	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153107	The remote UE access to relay from neighbor cell	Fujitsu	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	noted		R2-153108	SFN extension vs Timer based solution for extended Idle DRX cycle	Fujitsu	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153109	Discussion on Architecture and Procedure of C-plane	CATT	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153110	Discussion on mobility procedures of aggregation bearer	CATT	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	noted		R2-153111	Further Discussion on UP Architecture of LTE-WLAN Aggregation	CATT	discussion							Rel-13	LTE_WLAN_radio-Core			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-153112	Coexistence and free-ride issues of ACDC	China Mobile Com. Corporation	discussion							Rel-13	ACDC-RAN-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153113	Flow Control for LTE-WLAN aggregation	CATT	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153114	Procedures of Interworking Enhancements	CATT	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153115	RRM Measurements for WLAN	CATT	discussion							Rel-13	LTE_WLAN_radio-Core			
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	noted		R2-153116	Optimizations for the IDLE to CONNECTED state transition	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	revised		R2-153117	Latency reduction for uplink signalling traffic	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core	R2-153845	Tdoc type corrected	UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	noted		R2-153118	Release of dedicated RNTIs	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-153119	Discussion on ACDC	HTC Corporation	discussion							Rel-13	ACDC-RAN-Core			
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	No	withdrawn		R2-153120	Latency reduction for uplink signalling traffic	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-153121	Further considerations for DRX cycle configurations	Nokia Networks	discussion							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	noted		R2-153122	Options for quick return to PSM idle mode	Nokia Networks	discussion							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	revised		R2-153123	Text proposals for IMU sensor for indoor positioning	Sony	discussion							Rel-13	FS_UTRA_LTE_iPos_enh	R2-153922		
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153124	UE preferred eDRX behaviour	Sony	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153125	TTT handling for LAA RSRP/RSRQ measurement	Sony	discussion							Rel-13	LTE_LAA-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153126	LAA Measurements and carrier selection procedure	Sony	discussion							Rel-13	LTE_LAA-Core			
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153127	Cell Reselection for Enhanced Coverage	Sony	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153128	Relay Measurements and Selection/Reselection	Sony	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153129	Resource Allocation for Remote UE	Sony	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	revised		R2-153130	Signalling Protocol Options for WiFi, BT and Barometric Sensor Positioning	Qualcomm Incorporated	discussion							Rel-13	FS_UTRA_LTE_iPos_enh	R2-153859	Tdoc type should be "pCR"	
07.13	LTE Rel-13: LTE TEI13 enhancements	No	withdrawn		R2-153131	Discussion on the need of eNB awareness for EVS	Qualcomm Incorporated	discussion						Related to SA4 LS in R2-153036	Rel-13	TEI13	R2-153036		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153132	Discussion on MDT accessibility measurement	Qualcomm Incorporated	discussion							Rel-11	TEI11			
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	noted		R2-153133	SI reading for Open access CSG in shared network	Nokia Networks	discussion							Rel-12	EHNB_enh3-Core		Tdoc info missed	
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	noted	Late	R2-153134	Report of email discussion [90#22][LTE/NAICS] NAICS Capability Signalling	Nokia Networks	report						Report of e-mail discussion [90#22]	Rel-12	LTE_NAICS-Core			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-153135	UE capability structure for carrier aggregation enhancements	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153136	UE capabilities for LTE-WLAN Integration	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153137	RRC for LTE-WLAN aggregation	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153138	RLM for LTE-WLAN aggregation	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153139	Functions and termination of adaptation layer in LTE-WLAN aggregation	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153140	Flow control for LTE-WLAN aggregation	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-153141	Extension of Frequency Priorities	Nokia Networks	discussion							Rel-13	LTE_MC_load-Core			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153142	Consideration of bearer mapping for ProSe UE-to-Network Relays	Kyocera Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.4 to 7.5.4	LTE breakouts
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153143	Mobility and power considerations for extended coverage paging	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core			
06.02.08	LTE: Rel-12: WI: FDD/TDD Carrier Aggregation	Yes	agreed		R2-153144	Capturing PCell support for FDD-TDD CA	NTT DOCOMO, INC., Qualcomm Incorporated	CR	36.306	12.5.0	0288		F		Rel-12	LTE_CA_TDD_FDD-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153145	UL delay measurement	Nokia Networks	discussion							Rel-13	FS_LTE_eMDT2			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153146	MDT QoS metrics	Nokia Networks	discussion							Rel-13	FS_LTE_eMDT2			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-153147	ACDC impacts on RAN	Nokia Networks	discussion							Rel-13	ACDC-RAN-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153148	PDCP data indication to MAC with threshold	LG Electronics Inc.	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153149	Buffer status reporting and PDCP data transmission	LG Electronics Inc.	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated	Late	R2-153150	UE behaviours of different UE and Network conditions in LTE-WLAN integrated Network Environment	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153151	The uncoordinated and coordinated inter-PLMN ProSe discovery	ITRI	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153152	PHR format for eCA	LG Electronics Inc.	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-153153	Randomized threshold offset based reselection	ZTE Coporation, China Telecom	discussion							Rel-13	LTE_MC_load-Core			
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153154	Remaining issue on TAG for CA enhancement	LG Electronics Inc.	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153155	Transmission of PDCP Control PDU in split bearer	LG Electronics Inc.	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP

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07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153156	Support for Randomized threshold offset based reselection	China Telecom, ZTE Corporation	draftCR	36.304	12.5.0					Rel-13	LTE_MC_load-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153157	PDCP Discard issue with UL split bearers	LG Electronics Inc.	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153158	Support for Randomized threshold offset based reselection	China Telecom, ZTE Corporation	draftCR	36.331	12.6.0					Rel-13	LTE_MC_load-Core			
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153159	sCellDeactivationTimer for PUCCH SCell	LG Electronics Inc.	discussion							Rel-13	LTE_CA_enh_b5C-Core		WI code missed	LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	postponed		R2-153160	PDCP SDU discard in split bearers	LG Electronics Inc.	draftCR	36.323	12.4.0					Rel-13	LTE_dualC_enh-Core			LTE UP
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153161	Potentail area for latency reduction	LG Electronics Inc.	discussion							Rel-13	FS_LTE_LATRED			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153162	PDCP reordering enhancement	LG Electronics Inc.	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	noted		R2-153163	Consideration on DL MAC for unlicensed band	LG Electronics Inc.	discussion							Rel-13	LTE_LAA-Core			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153164	Bearer mapping in UE-Network Relay	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153165	Providing PPP information to Relay UE	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-153166	BSR and LCP supporting ProSe priorities	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153167	Measurement objects for LAA	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_LAA-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153168	Measurement objects for WLAN	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153169	UE requirements for LTE-WLAN interworking/integration	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_WLAN_radio-Core		moved from 7.6.4 to 7.6.2.1	
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	noted		R2-153170	Overall operational procedure for LTE-WLAN interworking	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-153171	L2 enhancements for eCA	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.10.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-153172	Remaining Issues for Extended Connected Mode DRX in LTE	MediaTek Inc.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153173	Paging Robustness for Extended Idle Mode DRX in LTE	MediaTek Inc.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.10.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-153174	[DRAFT] LS on extended connected mode DRX	MediaTek Inc.	LS out							Rel-13	LTE_extDRX-Core			LTE breakouts
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153175	Kick off to work on SFN/subframe offset reporting	NTT DOCOMO, INC. (Rapporteur)	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
11.08	UTRA Rel-13: UMTS TEI13 enhancements	Yes	noted	Late	R2-153176	Considerations on DL RLC PDU size configuration for D2F state transition	Huawei, HiSilicon	discussion							Rel-13	TEI13			UMTS
11.08	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated	Late	R2-153177	Correction on DL RLC PDU size configuration for D2F state transition	Huawei, HiSilicon	CR	25.331	12.6.0	5777		F		Rel-13	TEI13			UMTS
07.08	LTE Rel-13: SI: Further MDT enhancements	No	withdrawn		R2-153178	Reporting UL packet discard rate measurement per logical chanenl priority in MDT	LG Electronics Inc.	discussion							Rel-13	FS_LTE_eMDT2			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-153179	Discussion on RAN impacts due to ACDC	Huawei, HiSilicon	discussion							Rel-13	ACDC-RAN-Core			
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	noted		R2-153180	Discussion on ACDC in UMTS	Huawei, HiSilicon	discussion							Rel-13	ACDC-RAN-Core			UMTS
07.08	LTE Rel-13: SI: Further MDT enhancements	No	withdrawn		R2-153181	UL packet delay measurement in MDT	LG Electronics Inc.	discussion							Rel-13	FS_LTE_eMDT2			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153182	UL packet delay measurement in MDT	LG Electronics Inc.	discussion							Rel-13	FS_LTE_eMDT2			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153183	2C vs 3C	LG Electronics Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153184	Discussions on User Plane aspects of LTE-WLAN aggregation	LG Electronics Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	noted		R2-153185	Latency Reduction during Handover	Nokia Networks	discussion							Rel-13	FS_LTE_LATRED			
11.04	UTRA Rel-13: WI: Study on Network-Assisted Interference Cancellation and Suppression for UMTS	Yes	noted		R2-153186	Impacts of NAICS solutions in RAN2	Huawei, HiSilicon	discussion							Rel-13	FS_UTRA_NAICS			UMTS
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153187	Discussion on UL feedback for SC-PTM	Fiberhome Technologies Group	discussion							Rel-13	LTE_SC_PTM-Core			
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-153188	Enhancement of the UE timer used by MRO for Failure Analysis	Nokia Networks	discussion							Rel-13	TEI13			
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-153189	Location specific UE measurement configurations	Nokia Networks	discussion							Rel-13	TEI13			
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	noted		R2-153190	Work Plan for the WI of L2 and L3 Downlink enhancements	Huawei (Rapporteur)	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	noted		R2-153191	Way forward on UL delay measurement	CMCC, Qualcomm Incorporated, Huawei, Alcatel-Lucent, Samsung, ZTE, Intel, CATT, ITRI, Nokia Networks, China Telecom	discussion							Rel-13	FS_LTE_eMDT2			
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-153192	Discussion on the way forward of objectives (5) and (6) for EDL	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	not treated		R2-153193	Discussion on the parameters in the retrievable configurations	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	noted		R2-153194	Discussion on the solution on configuring retrievable configurations	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	noted		R2-153195	Discussion on seamless transition from URA_PCH to CELL_FACH	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153196	Discussion on RSSI Reporting	Guangdong OPPO Mobile Telecom.	discussion							Rel-13	LTE_LAA-Core			
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated		R2-153197	Introduction of seamless transition from URA_PCH to CELL_FACH	Huawei, HiSilicon	CR	25.301	12.0.0	0110		B		Rel-13	UTRA_EDL_L23-Core			UMTS

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11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	postponed		R2-153198	Introduction of seamless transition from URA_PCH to CELL_FACH	Huawei, HiSilicon	CR	25.308	13.0.0	0168		B		Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	postponed		R2-153199	Introduction of seamless transition from URA_PCH to CELL_FACH	Huawei, HiSilicon	CR	25.319	12.3.0	0134		B		Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	No	withdrawn		R2-153200	Introduction of seamless transition from URA_PCH to CELL_FACH	Huawei, HiSilicon	CR	25.321	12.2.0	0811		B		Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	postponed		R2-153201	Introduction of seamless transition from URA_PCH to CELL_FACH	Huawei, HiSilicon	CR	25.331	12.6.0	5778		B		Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	noted		R2-153202	Discussion on the extended RNTI solution	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configuations	Yes	not treated		R2-153203	Introduction of L2 and L3 Downlink enhancements in TS 25.300	Huawei, HiSilicon	CR	25.300	12.4.0	0018		B		Rel-13	UTRA_EDL_L23-Core		moved from 11.1.5	UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	noted		R2-153204	Discussion on improved HARQ retransmission	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	not treated		R2-153205	Introduction of improved HARQ retransmission for HSDPA	Huawei, HiSilicon	CR	25.308	13.0.0	0169		B		Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	not treated		R2-153206	Introduction of improved HARQ retransmission for HSDPA	Huawei, HiSilicon	CR	25.321	12.2.0	0812		B		Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	not treated		R2-153207	Introduction of improved HARQ retransmission for HSDPA	Huawei, HiSilicon	CR	25.331	12.6.0	5779		B		Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	not treated		R2-153208	Introduction of improved HARQ retransmission for HSDPA	Huawei, HiSilicon	CR	25.306	12.5.0	0487		B		Rel-13	UTRA_EDL_L23-Core			UMTS
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153209	Discussion on LAA DRS design	China Mobile Com. Corporation	discussion							Rel-13	LTE_LAA-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153210	Extending Frequency Priorities	Nokia Networks	draftCR	36.331	12.5.0					Rel-13	LTE_MC_load-Core		WI code missed	
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153211	Extending Frequency Priorities	Nokia Networks	draftCR	36.304	12.5.0					Rel-13	LTE_MC_load-Core		WI code missed	
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153212	Consideraton on the QoS guarantee in LTE-WLAN aggregation	China Mobile Com. Corporation	discussion							Rel-13	LTE_WLAN_radio-Core		moved from 7.6.3 to 7.6.2.1	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153213	Establishment Cause for VoLTE calls	Nokia Networks	discussion							Rel-10	TEI10		WI code missed in Tdoc request	
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	withdrawn		R2-153214	Impacts on system change acquisition for eDRX	LG Electronics Inc.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153215	Addition of establishment cause for mobile-originating VoLTE calls	Nokia Networks	CR	36.331	10.17.0	1856		C		Rel-10	TEI10			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153216	RRM measurements and reporting	China Mobile Com. Corporation	discussion							Rel-13	LTE_LAA-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153217	RSSI measurements and reporting	China Mobile Com. Corporation	discussion							Rel-13	LTE_LAA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153218	Addition of establishment cause for mobile-originating VoLTE calls	Nokia Networks	CR	36.331	11.12.0	1857		A		Rel-11	TEI10			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153219	Addition of establishment cause for mobile-originating VoLTE calls	Nokia Networks	CR	36.331	12.6.0	1858		A		Rel-12	TEI10			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153220	Reporting UL packet discard rate measurement per logical chanenl priority in MDT	LG Electronics Inc.	discussion							Rel-13	FS_LTE_eMDT2			
07.08	LTE Rel-13: SI: Further MDT enhancements	No	withdrawn		R2-153221	Reporting UL packet discard rate measurement per logical chanenl priority in MDT	LG Electronics Inc.	discussion							Rel-13	FS_LTE_eMDT2			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153222	Potential protocol enhancement for Fast uplink access	Nokia Networks	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153223	Simulation result for fast uplink access and TTI shortening	Nokia Networks	discussion							Rel-13	FS_LTE_LATRED			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153224	Analysis on IDLE mode extended DRX cycle solutions	Nokia Networks	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	No	withdrawn		R2-153225	Analysis on IDLE mode extended DRX cycle solutions	Nokia Networks	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153226	PUCCH SCell pre-activation	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	noted		R2-153227	Discussion on UE capabilities of sidelink communication and discovery	Huawei, HiSilicon	discussion							Rel-12	LTE_D2D_Prox-Core			
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	not treated		R2-153228	Remaining issues on PUCCH SCell	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	revised		R2-153229	Corrections on UE sidelink capabilities in TS 36.306	Huawei, HiSilicon	CR	36.306	12.5.0	0289		F		Rel-12	LTE_D2D_Prox-Core	R2-153936		
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	agreed		R2-153230	Corrections for STCH in 36.322	Huawei, HiSilicon	CR	36.322	12.2.0	0108		F		Rel-12	LTE_D2D_Prox-Core			LTE UP
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	noted		R2-153231	Report of email discussion on sidelink BSR	Huawei, HiSilicon	discussion							Rel-12	LTE_D2D_Prox-Core			LTE UP
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	No	withdrawn		R2-153232	Corrections for reporting and cancellation of SL BSR	Huawei, HiSilicon	CR	36.321	12.6.0	0784		F		Rel-13	LTE_D2D_Prox-Core			LTE UP
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	noted		R2-153233	Issues on reception of sidelink communication	Huawei, HiSilicon	discussion							Rel-12	LTE_D2D_Prox-Core			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	ejected		R2-153234	Corrections on configuration of resource pools in SIB18	Huawei, HiSilicon	CR	36.331	12.6.0	1859		F		Rel-12	LTE_D2D_Prox-Core			
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153235	Inter-frequency scenario and requirements for UE-Network relay	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153236	Impact analysis of sidelink gap	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153237	PDCP Discard	MediaTek Inc.	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153238	Priority handling based on ProSe Per Packet Priority	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153239	Considerations on Relay initiation	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153240	Operator requirements for Idle-eDRX solution	NTT DOCOMO INC.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	noted		R2-153241	UE-to-Network Relay connection establishment	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-153242	Discovery transmission on inter-carriers of intra-PLMN and inter-PLMN	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153243	RRM Measurement for LWA and NCIWK	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	noted		R2-153244	ACDC impacts on AS layer	LG Electronics Inc.	discussion							Rel-13	ACDC-RAN-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153245	Reception of DL-SCH carrying MCCH	LG Electronics Inc.	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153246	Reception of DL-SCH carrying MTCH	LG Electronics Inc.	discussion							Rel-13	LTE_SC_PTM-Core			

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07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153247	SI change notification for Rel-13 MTC UEs	LG Electronics Inc.	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153248	WLAN Mobility with WLAN Group	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	revised		R2-153249	highPriorityAccess for MMTEL voice, MMTEL video and SMS	MediaTek Inc.	CR	36.331	12.6.0	1860		F		Rel-12	SCM_LTE-Core	R2-153938		
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153250	Impacts on system change acquisition for eDRX	LG Electronics Inc.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	noted		R2-153251	Support of ACDC in UTRAN	Ericsson	discussion							Rel-13	ACDC-RAN-Core			UMTS
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153252	Discussion on radio resource allocation for ProSe UE-to-NW relay	Shenzhen Coolpad Technologies	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153253	Discussion on RRM Issues for LTE WLAN Interworking Enhancement	Spreadtrum Communications	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153254	Discussion on relay initialization procedure	Shenzhen Coolpad Technologies	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-153255	Considerations on signalling of ACDC barring information	Intel Corporation (UK) Ltd	discussion							Rel-13	ACDC-RAN-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153256	Transmission of PDCP control PDUs for Split bearers	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153257	Buffer status reporting/priority handling for ProSe communication	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153258	LCP procedure for ProSe communication	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153259	Multiple SA transmissions during one SC period	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153260	Resource pool selection for the autonomous resource allocation mode	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153261	Simultaneous Uu and PC5 link and SRB DRB mapping	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-153262	Solutions addressing Multi-Carrier Load Balancing	Nokia Networks	discussion							Rel-13	LTE_MC_load-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-153263	PHR for CA enhancement for more than 5 CCs	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	not treated		R2-153264	Considerations on RAN2 aspects of Indoor Positioning Enhancements	Intel Corporation	discussion							Rel-13	FS_UTRA_LTE_iPos_enh			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153265	Summary of email discussion [90#01][LTE/CA] MIMO/CSI capability for intra-band contiguous CA	Intel Corporation	discussion							Rel-12	LTE_CA-Core, TEI12			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153266	Additional MIMO/CSI capability for intra-band contiguous CA	Intel Corporation	CR	36.331	12.6.0	1861		F	Revision of R2-152921	Rel-12	LTE_CA-Core, TEI12	R2-153942	wrong CR number used in CR coverpage	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153267	Additional MIMO/CSI capability for intra-band contiguous CA	Intel Corporation	CR	36.306	12.5.0	0290		F		Rel-12	LTE_CA-Core, TEI12	R2-153943	wrong CR number used in CR coverpage	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153268	Proposed changes to TS36.212 for additional MIMO/CSI capability	Intel Corporation	discussion							Rel-12	LTE_CA-Core, TEI12			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn	Late	R2-153269	Draft LS on additional MIMO/CSI capability for intra-band contiguous CA	Intel Corporation	LS out							Rel-12	LTE_CA-Core, TEI12			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	revised		R2-153270	Sidelink terminology alignment in TS 36.300	Intel Corporation, Qualcomm Incorporated	CR	36.300	12.6.0	0786		F	Revision of R2-152153	Rel-12	LTE_D2D_Prox-Core	R2-153934		
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	revised		R2-153271	Sidelink terminology alignment in TS 36.304	Intel Corporation, Qualcomm Incorporated	CR	36.304	12.5.0	0273		F	Revision of R2-152154	Rel-12	LTE_D2D_Prox-Core	R2-153935		
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	revised		R2-153272	Corrections to Sidelink in MAC	Intel Corporation	CR	36.321	12.6.0	0785		F		Rel-12	LTE_D2D_Prox-Core	R2-153864	WI code missed	LTE UP
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153273	RSSI measurement for LAA	Intel Corporation	discussion							Rel-13	LTE_LAA-Core			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-153274	Discussion on UE capability signaling for B5C	Intel Corporation	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153275	Layer 2 header size to support CA with up to 32 CCs	Intel Corporation	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153276	Open aspects on system information messages for Release-13 low complexity UEs and enhanced coverage	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	noted	Late	R2-153277	Email discussion summary report on [90#23][LTE/MTCe2] SIB Contents	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153278	Considerations on random access procedure for Release-13 low complexity UEs and enhanced coverage	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	noted		R2-153279	Paging for Release-13 low complexity UEs and enhanced coverage	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	not treated		R2-153280	Timer impact for Release-13 low complexity UEs and enhanced coverage	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	not treated		R2-153281	UE battery lifetime evaluation for MTC/C-IoT use cases	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153282	Measurement on PSDCH	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153283	Radio quality criteria for the (re)selection of the relay UE	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153284	Considerations on relay UE operation for packet relaying	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.4 to 7.5.4	LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153285	Priority handling for UE autonomous resource selection	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153286	Support of public safety discovery in partial- and out-of-coverage	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153287	Support of one-to-one communication	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153288	Stability evaluation for load distribution schemes	Intel Corporation	discussion							Rel-13	LTE_MC_load-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153289	Performance impact of different load distribution triggering mechanisms	Intel Corporation	discussion							Rel-13	LTE_MC_load-Core			

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07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-153290	Extension of frequency priority	Intel Corporation	discussion							Rel-13	LTE_MC_load-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	noted		R2-153291	Analysis of extending DRX cycle solutions for idle mode	Intel Corporation	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	noted		R2-153292	Evaluation of TTI reduction gain with additional L1/L2 overhead	Intel Corporation	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	withdrawn		R2-153293	Effect of UE and eNB processing times on TCP performance	Intel Corporation	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153294	Protocol impact of fast uplink access solution for latency reduction	Intel Corporation	discussion							Rel-13	FS_LTE_LATRED			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153295	Realizing off-network MCPTT priority and associated pre-emption on PC5	U.S. Department of Commerce	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153296	L2 enhancements for more than 5 CCs	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153297	Further Extended Power Headroom Report	Nokia Networks	CR	36.321	12.6.0	0786		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153298	Further Extended Power Headroom Report	Nokia Networks	CR	36.331	12.6.0	1862		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	postponed		R2-153299	Extending RLC header	Nokia Networks	CR	36.322	12.2.0	0109		B	Relates to R2-153296	Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153300	Public safety perspectives on GCSE_LTE latency requirements for evaluating UE-Network Relay solutions	U.S. Department of Commerce	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-153301	Restricting Unattended/Background Data Traffic	Verizon, Acatel-Lucent, Ericsson, Qualcomm	discussion							Rel-13	TEI13			
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	noted		R2-153302	Retrievable configurations	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	noted		R2-153303	Seamless transition from URA_PCH	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	noted		R2-153304	Overview of solutions for extending the RNTI space	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
08	UTRA Release 10 and earlier releases	Yes	noted		R2-153305	Clarification for the physical channel combination of DC-HSUPA and MC-HSDPA	Nokia Networks	discussion							Rel-10	RANimp-DC_HSUPA, 4C_HSDPA, 8C_HSDPA		Tdoc type corrected	UMTS
10.6	UTRA Rel-12: WI: Increasing the minimum number of carriers for UE monitoring in UTRA and E-UTRA	Yes	revised		R2-153306	Clarification for the inter-frequency measurement results on RACH with extended cell ID values	Nokia Networks, Huawei, HiSilicon	CR	25.331	12.6.0	5780		F		Rel-12	LTE_UTRA_IncMon-Core	R2-153905	AI and WI code does not match; moved from 10.7 to 10.6	UMTS
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153307	Connected mode mobility support for Rel.13 eMTC	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153308	Solution for Idle load distribution	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_MC_load-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	noted		R2-153309	Monitoring VoIP call drop	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	FS_LTE_eMDT2			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153310	Minor corrections on SON measurements	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-11	LTE-L23, TEI11			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-153311	Considerations of Measurement Issues in LAA	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153312	RSSI Measurement in LAA	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153313	Supported functionalities and parameters for LAA cell	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153314	DL LBT Operation	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153315	Delivery of PDCP PDU to RLC Layer for UL Split Bearer	Huawei, HiSilicon	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153316	PDCP data transmission for UL split bearer	Huawei, HiSilicon	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153317	PDCP Discard Issue for UL Split Bearer	Huawei, HiSilicon	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153318	UL data transmission upon SCG-RLF for UL split bearer	Huawei, HiSilicon	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153319	Over-scheduling problem for UL split bearer	Huawei, HiSilicon	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn		R2-153320	UL64QAM configuration for release-12 category UEs	Qualcomm Incorporated	CR	36.331	12.6.0	1863		F		Rel-12	TEI12			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153321	Support for 4 layer MIMO with TM3 and TM4	Qualcomm Incorporated	discussion							Rel-10	TEI10			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153322	Introduction of 4 layer MIMO with TM3/4	Qualcomm Incorporated	CR	36.331	10.17.0	1864		F		Rel-10	TEI10			
07.01.1	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Organizational	Yes	revised		R2-153323	CR to capture LAA agreements	Huawei, HiSilicon	CR	36.300	13.0.0	0787		B		Rel-13	LTE_LAA-Core	R2-153985		
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153324	Remaining issues on Activation/Deactivation MAC CE for b5C	Innovative Technology Lab Co.	discussion							Rel-13	LTE_CA_enh_b5C-Core		Tdoc type corrected	LTE UP
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	rejected		R2-153325	Correction on Sidelink BSR transmission	Innovative Technology Lab Co.	CR	36.321	12.6.0	0787		F		Rel-12	LTE_D2D_Prox-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153326	PDCP Control PDU for UL Split Bearer	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153327	How to capture uplink split in the relevant specifications	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	No	withdrawn		R2-153328	Introducing threshold based uplink split operation into the PDCP specification	Samsung Electronics Co., Ltd	CR	36.323	12.4.0	0140		F		Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153329	Introducing threshold based uplink split operation into the RRC specification	Samsung Electronics Co., Ltd	draftCR	36.331	12.5.0					Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153330	On preventing PDCP SN gap due to discard timer	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153331	Discussion on Contention Based Access	Samsung Electronics Co., Ltd	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	noted		R2-153332	Skipping uplink transmission with no data to transmit (discussion)	Samsung Electronics Co., Ltd	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153333	Skipping uplink transmission with no data to transmit (321 CR)	Samsung Electronics Co., Ltd	draftCR	36.321	12.6.0					Rel-13	FS_LTE_LATRED			

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07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153334	Skipping uplink transmission with no data to transmit (331 CR)	Samsung Electronics Co., Ltd	draftCR	36.331	12.6.0					Rel-13	FS_LTE_LATRED			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153335	Further Considerations on SIB Transmission	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153336	Introducing threshold based uplink split operation into the PDCP specification	Samsung Electronics Co., Ltd	draftCR	36.323	12.4.0					Rel-13	LTE_dualC_enh-Core			LTE UP
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153337	Further Considerations on Paging for Coverage Enhancement UEs	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153338	Enhancement for Coverage Optimization	CATT	discussion							Rel-13	FS_LTE_eMDT2			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153339	Extending DRX Cycle in Idle Mode	HuaWei Technologies Co., Ltd	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153340	Text Proposal for measurement rules supporting CSP	LG Electronics Inc.	discussion							Rel-13	LTE_MC_load-Core			
07.10.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-153341	Extending DRX Cycle in Connected Mode	HuaWei Technologies Co., Ltd	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153342	Considerations on the measurement for LTEWLAN aggregation and interworking enhancements	China Telecommunications	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153343	Consideration on mobility aspect for LTE-WLAN aggregation	China Telecommunications	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	revised		R2-153344	Considerations on the adoption of adaption layer in the user plane for LTE-WLAN aggregation	China Telecommunications	discussion							Rel-13	LTE_WLAN_radio-Core	R2-153928		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153345	IDC enhancements for Inter-Modulation Distortion in UL CA	NTT DOCOMO, INC., Nokia Networks	discussion							Rel-11	SPIA_IDC_LTE-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153346	IDC enhancements for Inter-Modulation Distortion in UL CA	NTT DOCOMO, INC.	CR	36.331	12.6.0	1865		B		Rel-13	SPIA_IDC_LTE-Core, TEI13			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153347	Discusson on the configuration of AP group	ZTE Coporation	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153348	Sidelink gap details for direct discovery	Kyocera	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153349	Consideration on the adaptation entity in WT	ZTE Corporation	discussion							Rel-13	LTE_WLAN_radio-Core			
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	revised		R2-153350	TS36.302 rapporteur's cleanup	Alcatel-Lucent	CR	36.302	12.4.0	0061		D		Rel-12	TEI12	R2-153869	WI code in Tdoc request corrected	
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153351	Consideration of initiation of ProSe UE-to-Network Relays	Kyocera	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153352	Discussion on the interface between WT and UE	ZTE Corporation	discussion							Rel-13	LTE_WLAN_radio-Core			
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	agreed		R2-153353	Correction on UE band combinition capability	Huawei, HiSilicon	CR	36.331	12.6.0	1866		F		Rel-12	TEI12			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153354	Correction on Restriction to CA capability signalling	Huawei, HiSilicon	CR	36.331	10.17.0	1867		F		Rel-10	LTE_CA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153355	Correction on Restriction to CA capability signalling	Huawei, HiSilicon	CR	36.331	11.12.0	1868		A		Rel-11	LTE_CA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153356	Correction on Restriction to CA capability signalling	Huawei, HiSilicon	CR	36.331	12.6.0	1869		A		Rel-12	LTE_CA-Core			
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153357	Consideration on RACH procedure in coverage enhancement	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153358	Mobility Enhancement in Emtc	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	not treated		R2-153359	Consideration on the simultaneous transmission for MTC Ues	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-153360	UE CA capability signalling for B5C	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-153361	Remaining CP issues for B5C	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153362	UP impacts due to high peak data rate of 32CCs	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153363	Extention of L field in MAC PDU	Huawei, HiSilicon	CR	36.321	12.6.0	0788		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	ejected		R2-153364	Extention of SN and SO field in RLC PDU	Huawei, HiSilicon	CR	36.322	12.2.0	0110		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153365	Extention of SN field in PDCP PDU	Huawei, HiSilicon	CR	36.323	12.4.0	0141		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153366	Extention due to high data rate	Huawei, HiSilicon	CR	36.331	12.6.0	1870		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153367	SRS handling for SCells in Secondary PUCCH Group	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153368	Issues for SR on PUCCH Scell	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153369	Pre-activation SR	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153370	Possible issues in intra-PLMN and coordinated inter-PLMN	Kyocera	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153371	MTC Paging transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153372	MTC SIB transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153373	Downlink latency reduction for unsynchronized UEs	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153374	Uplink latency reduction for synchronized UEs	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153375	Problems of the current LTE system on latency	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	revised		R2-153376	Evaluation on the gains provided by one symbol length TTI	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED	R2-153851		
07.03.1	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Organizational	Yes	noted		R2-153377	Work plan for SC-PTM WI	Huawei (Rapporteur)	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	noted		R2-153378	SC-PTM configuration and operation	Huawei, HiSilicon	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153379	Service Continuity for the UE in RRC_CONNECTED	Huawei, HiSilicon	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	not treated		R2-153380	PDCCH search space for SC-PTM transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	revised		R2-153381	Draft LS to RAN1 on SC-PTM transmission	Huawei	LS out							Rel-13	LTE_SC_PTM-Core	R2-153949		

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07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	revised		R2-153382	Introduction of SC-PTM stage2	Huawei, HiSilicon	draftCR	36.300	13.0.0				two week email discussion [91#13][LTE/SC-PTM] planned	Rel-13	LTE_SC_PTM-Core	R2-153889		
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153383	Clarification of PDCP behavior for uplink split bearer	Kyocera	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153384	Consideration on WLAN measurement for the LTE/WLAN aggregation and interworking enhancement	ZTE Coiporation	discussion							Rel-13	LTE_WLAN_radio-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153385	Idle mode UE behaviour with Extended DRX	Kyocera	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153386	Post processing procedure of UL latency measurements	Kyocera	discussion							Rel-13	FS_LTE_eMDT2			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153387	Discussion on the PDCP discard issue in bear split	ZTE Coiporation	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153388	Service continuity solution for SC-PTM	TD Tech	discussion							Rel-13	LTE_SC_PTM-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153389	Logged MDT under IDC	Kyocera	discussion							Rel-13	FS_LTE_eMDT2			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153390	SC-PTM configuration procedure	TD Tech	discussion							Rel-13	LTE_SC_PTM-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153391	Logging of latency in call establishment	Kyocera	discussion							Rel-13	FS_LTE_eMDT2			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and eaflier: CP & Common	Yes	noted		R2-153392	Blacklisted PCIs in Carrier Aggreation	Nokia Networks	discussion							Rel-10	LTE_CA-Core		WI code missed in Tdoc request	
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	No	withdrawn		R2-153393	RSSI Measurement for LAA	ETRI	other							Rel-13	LTE_LAA-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153394	Draft CR_Improvement on the detection of discarded PDCP PDU	ZTE Coiporation	draftCR	36.323	13.0.0					Rel-13	LTE_dualC_enh-Core			LTE UP
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	No	withdrawn		R2-153395	Discussion on Activation/Deactivation for LAA	ETRI	other							Rel-13	LTE_LAA-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153396	RRM measurement for carrier selection	Kyocera	discussion							Rel-13	LTE_LAA-Core			
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	rejected		R2-153397	Corrections for reporting and cancellation of SL BSR	Huawei, HiSilicon	CR	36.321	12.6.0	0789		F		Rel-13	LTE_D2D_Prox-Core			LTE UP
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	withdrawn		R2-153398	Corrections on UE sidelink capabilities in TS 36.306	Huawei, HiSilicon	CR	36.306	12.5.0	0291		A		Rel-13	LTE_D2D_Prox-Core			
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	rejected		R2-153399	Corrections for STCH in 36.322	Huawei, HiSilicon	CR	36.322	12.2.0	0111		A		Rel-13	LTE_D2D_Prox-Core		no shadow CR for Rel-13 needed	LTE UP
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	withdrawn		R2-153400	Corrections on configuration of resource pools in SIB18	Huawei, HiSilicon	CR	36.331	12.6.0	1871		A		Rel-13	LTE_D2D_Prox-Core		no shadow CR for Rel-13 needed	
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	not treated		R2-153401	draft LS on sidelink capabilities	Huawei	LS out							Rel-12	LTE_D2D_Prox-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153402	Distributing idle UEs to multiple carriers	Huawei, HiSilicon	discussion							Rel-13	LTE_MC_load-Core			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153403	Procedure of Relay-UE selection and reselection	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153404	Addressing for ProSe one-to-one communication	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153405	Initial consideration of fast uplink access solution	Kyocera	discussion							Rel-13	FS_LTE_LATRED			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	withdrawn		R2-153406	Continuous vs one-shot distribution mechanism for reselection	Kyocera	discussion							Rel-13	LTE_MC_load-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	withdrawn		R2-153407	Detailed solution of one-shot re-distribution mechanism	Kyocera	discussion							Rel-13	LTE_MC_load-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153408	Link adaptation for SC-PTM transmission	Kyocera	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	withdrawn		R2-153409	Details of radio interface enhancements for SC-PTM transmission	Kyocera	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153410	Service continuity with SC-PTM	Kyocera	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153411	Switching between SC-PTM and MBSFN	Kyocera	discussion							Rel-13	LTE_SC_PTM-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153412	RAN assistance parameters for Idle UE in interworking enhancement	Kyocera	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153413	UE offload confirmation for interworking enhancement	Kyocera	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153414	Consideration on WLAN measurement	Kyocera	discussion							Rel-13	LTE_WLAN_radio-Core			
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	not treated		R2-153415	Reducing use delay on PUCCH SCell	III	discussion							Rel-13	LTE_CA_enh_b5C-Core		WI code missed	LTE UP
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153416	Combined SR with BSR for reducing UP latency	III	discussion							Rel-13	FS_LTE_LATRED			
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	not treated		R2-153417	Remaining issues on interleaved SR	Samsung Telecommunicati ons	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-153418	Details of Activation/Deactivation MAC CE in UE aspect	Samsung Telecommunicati ons	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153419	Discussion on LAA Measurement and Report	ITRI	discussion							Rel-13	LTE_LAA-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-153420	Remaining issues on PHR MAC CE in UP aspect	Samsung Telecommunicati ons	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153421	UE assistance for carrier selection	ITRI	discussion							Rel-13	LTE_LAA-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153422	Some Design Needs for extended DRX cycle	China Unicom	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-153423	C-RNTI collision problem in Rel-13 CA enhancements	Samsung Telecommunicati ons	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153424	Carrier Prioritization for Type 1 Inter-Carrier Discovery	ITRI	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-153425	BSR format for B5C	LG Electronics Inc.	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153426	Network control on relay UE initiation and activation	ITRI	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.10.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-153427	How to apply the extended DRX in the connected mode	Samsung Telecommunicati ons	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153428	Update of WLAN identifiers for measurement and reporting	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153429	RSSI Measurement for LAA	ETRI	discussion							Rel-13	LTE_LAA-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153430	Consideration of user preference	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153431	Discussion on Activation/Deactivation for LAA	ETRI	discussion							Rel-13	LTE_LAA-Core			

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153432	On the length of eDRX in the Idle mode	Samsung Telecommunications	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153433	Discussion on the configuration of a group of APs	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153434	Completion of AP selection	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153435	On the ETWS/CMAS support in Rel-13 eDRX	Samsung Telecommunications	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153436	Procedure of LTE-WLAN Aggregation	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153437	How to apply the extended DRX in the idle mode	Samsung Telecommunications	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153438	Discussion on WLAN Authentication of LTE-WLAN Aggregation	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153439	Analysis of the user plane architecture and functionality for LTE/WLAN aggregation	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153440	SI update in the extneded IDLE DRX	Samsung Telecommunications	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153441	Probability based idle UE distribution for multicarrier environment	ITRI	discussion							Rel-13	LTE_MC_load-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153442	Signalling for Rel-13 eDRX support	Samsung Telecommunications	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153443	Remaining Issues of Supporting Uplink Split Bearers	ITRI	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153444	PDCP Discard Issue of Split Bearer	ITRI	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153445	Enhancements for Refined MDT Measurements	Samsung Telecommunications	discussion							Rel-13	FS_LTE_eMDT2			
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	not treated		R2-153446	DRX enhancements for Rel-13 low complexity MTC	Samsung Telecommunications	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153447	Cell Selection/Reselection for Rel-13 low complexity MTC	Samsung Telecommunications	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153448	Paging reception procedure in the enhanced coverage mode	Samsung Telecommunications	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153449	PF and PO for Rel-13 low complexity MTC	Samsung Telecommunications	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153450	RS-SINR measurement condition triggered by RSRQ measurement for load balancing	LG Electronics Inc.	discussion							Rel-13	LTE_MC_load-Core			
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153451	Random Access procedure for Rel-13 MTC UE	NEC Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153452	Coverage enhancement information for MTC paging	NEC Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153453	Valid samples in DRS based measurement	NEC Corporation	discussion							Rel-13	LTE_LAA-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153454	Draft LS on valid measurement samples in LAA	NEC Corporation	LS out							Rel-13	LTE_LAA-Core			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-153455	ACDC Category handling	NEC Corporation	discussion							Rel-13	ACDC-RAN-Core			
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153456	CN Impacts of inter-PLMN sidelink discovery transmission	Huawei, HiSilicon	discussion								LTE_eD2D_Prox-Core			LTE breakouts
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-153457	Impacts on RRC for more than 5 CCs	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core		Tdoc type corrected	
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	noted		R2-153458	Impacts on RRC for PUCCH on SCell	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core		Tdoc type corrected	
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	revised		R2-153459	36331 CR for capturing B5C and SCell on PUCCH	Nokia Networks	CR	36.331	12.6.0	1872		B		Rel-13	LTE_CA_enh_b5C-Core	R2-153946	wrong Tdoc type used; should be draftCR	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-153460	Multiple NS/P-max handling	Nokia Networks	discussion							Rel-9	TEI9		Tdoc type corrected	
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153461	Management of the PC5 link between the Relay UE and the Remote UE	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153462	Initiation of ProSe UE-to-Network relay	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153463	Managing PUCCH resources on a deactivated PUCCH SCell	HTC Corporation	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-153464	Paging optimization	Huawei, HiSilicon	discussion							Rel-12	TEI12		moved from 6.2.9.1 to 7.13	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153465	Discussion on 4-layer MIMO with TM3 and TM4	Nokia Networks, Huawei, HiSilicon, Samsung, Deutsche Telekom	discussion						Summary of offline discussion on introduction of 4-layer TM3/4 as requested by RAN#68.	Rel-10	TEI10			
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	revised		R2-153466	Paging optimization	Huawei, HiSilicon	CR	36.331	12.6.0	1873		F		Rel-12	TEI12	R2-153870	moved from 6.2.9.1 to 7.13	
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153467	Discussion on SR prohibition time and D-SR failure	HTC Corporation	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-153468	Introduction of Multiple NS and Pmax	Nokia Networks	CR	36.331	9.18.0	1874		B	Related to R2-153460	Rel-9	TEI9			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-153469	Introduction of Multiple NS and Pmax	Nokia Networks	CR	36.331	10.17.0	1875		B	Related to R2-153460	Rel-10	TEI9		NOTE: really cat.B? or cat.A?	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-153470	Introduction of Multiple NS and Pmax	Nokia Networks	CR	36.331	11.12.0	1876		A	Related to R2-153460	Rel-11	TEI9			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-153471	Introduction of Multiple NS and Pmax	Nokia Networks	CR	36.331	12.6.0	1877		A	Related to R2-153460	Rel-12	TEI9			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153472	Issues of SC-PTM configuration	Potevio Company Limited	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153473	Accurate RAN counting mechanism	Potevio	discussion							Rel-13	LTE_SC_PTM-Core			
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	revised		R2-153474	Draft Response LS on Paging optimization	Huawei	LS out						reply LS to R2-153015	Rel-12	TEI12, LC_MTC_LTE-Core, LTE_MTCe2_L1-Core	R2-153015, R2-153871	moved from 6.2.9.1 to 7.13	
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153475	Discussion on relay UE selection and re-selection	Potevio	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts

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07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153476	Considerations on supported RRC modes for relay discovery	Potevio Company Limited	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153477	Correction on the reference of EPDCCH	Huawei, HiSilicon	CR	36.331	11.12.0	1878		F		Rel-11	LTE_enh_dl_ctrl-Core	R2-153929		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153478	Correction on the reference of EPDCCH	Huawei, HiSilicon	CR	36.331	12.6.0	1879		A		Rel-12	LTE_enh_dl_ctrl-Core	R2-153930		
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-153479	Additional radio bearer combination for EVS over CS	Huawei, HiSilicon	discussion							Rel-13	EVSoCS_UTRAN-Core		noted at Joint RAN1 and RAN2 EVS session	UMTS
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-153480	Impact of PPP on user plane	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153481	Relay UE selection in coverage	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153482	Sidelink measurements for Relay Selection	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153483	Floor control and pre-emption for MCPTT using ProSe	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.5 to 7.5.4	LTE breakouts
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Connected Mode	Yes	noted		R2-153484	Discussion on the way forward for the extended DRX for connected mode	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153485	Consideration on random acess for R13 eMTC	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153486	Consideration on random acess for further MTC enhancement	ASUSTEK COMPUTER (SHANGHAI)	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	No	withdrawn		R2-153487	Discussions on L3-based UE-to-Network Relays communication procedure	CATT	other											LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153488	Discussions on L3-based UE-to-Network Relays communication procedure	CATR	discussion							Rel-13	LTE_eD2D_Prox-Core		Tdoc type corrected	LTE breakouts
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	noted		R2-153489	Areas for latency reduction	Ericsson	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	noted		R2-153490	L2 enhancements to reduce latency	Ericsson	discussion							Rel-13	FS_LTE_LATRED			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153491	Clarifications on BSR of UL bearer split	ZTE Corporation	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-153492	TBS handling of DL transmission modes with 4/8 CSI-RS antenna ports	NTT DOCOMO, INC.	discussion							Rel-10	LTE_eDL_MIMO-Core			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153493	Study of shorter TTI for latency reduction	Ericsson	discussion							Rel-13	FS_LTE_LATRED			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153494	RRM measurement for LAA cell	CATT	discussion							Rel-13	LTE_LAA-Core			
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	noted		R2-153495	Considerations on quick return into power saving mode	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	noted		R2-153496	Service continuity aspects for SC-PTM	Ericsson	discussion							Rel-13	LTE_SC_PTM-Core			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	noted		R2-153497	Analysis on latency reduction with TTI shortening	CATT, China Telecom	discussion							Rel-13	FS_LTE_LATRED			
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-153498	Discussion on DRX extension configuration in idle mode	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153499	Analysis on VoLTE capacity with TTI shortening	CATT	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153500	Analysis on uplink access solutions	CATT	discussion							Rel-13	FS_LTE_LATRED			
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-153501	Considerations on DRX extension beyond SFN limit in idle mode	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	not treated		R2-153502	Stage 3 impacts analysis on DRX extension within SFN limit for both idle and connected mode	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		moved from 11.2.1	UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	not treated		R2-153503	Draft LS to RAN3 on Quick return to PSM	Huawei	LS out							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	not treated		R2-153504	Detail on PUCCH SCell configuration	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	noted		R2-153505	UE actions upon PUCCH SRS release request	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153506	Discussion on PHR for eCA	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core		moved from 7.2.3.2 to 7.2.3.1	LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153507	Consideration on over-scheduling issue for uplink split	CATT	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	revised		R2-153508	Clarification on cell selection sequence upon leaving RRC_CONNECTED	HTC Corporation	CR	36.331	12.6.0	1880		F		Rel-12	UTRA_LTE_WLAN_interw-Core	R2-153856		
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153509	PUCCH SCell activation	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-153510	Issues on intra-band non-contiguous CA signaling	Intel Corporation	discussion							Rel-10	LTE_CA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153511	Clarification to idle mode camping for MBMS reception	Intel Corporation	discussion							Rel-9	MBMS_LTE			
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	revised		R2-153512	WLAN-aided indoor positioning with FTM	Intel Corporation	discussion							Rel-13	FS_UTRA_LTE_iPos_enh	R2-153878		
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153513	User Plane Aspects of LWA	Intel Corporation	discussion							Rel-13	LTE_WLAN_radio-Core			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153514	Specificaiton impacts of short TTI	ZTE Corporation	discussion							Rel-13	FS_LTE_LATRED			
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153515	Further discussion on cell selection reselection parameters in EC	HTC Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153516	Further Discussion on LAA Data Transmission	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153517	Further Discussion on LAA Radio Link Adaptation	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core			
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	noted		R2-153518	Report of email discussion [90#20][LTE/C-IoT] Data transmission targets for security-related procedures	Vodafone GmbH	report						Report of e-mail discussion [90#20]	Rel-13			moved from 7.4.1 to 7.4.6	
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	revised		R2-153519	Miscellaneous corrections on Sidelink	ASUSTEK COMPUTER (SHANGHAI)	CR	36.321	12.6.0	0790		F		Rel-12	LTE_D2D_Prox-Core	R2-153865		LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153520	Scheduling coordination between MeNB and SeNB	CATT	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153521	Further Discussion on RRM Measurement and Carrier Selection for LAA Scell	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-153522	Considerations on PBR of UL split bearer	CATT	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153523	Further Thoughts on (De)activation of LAA Scell	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core			
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	revised		R2-153524	[draft] Reply LS on C-IoT/MTC data transmission targets for security-related procedures	Vodafone GmbH	LS out							Rel-13		R2-153940	moved from 7.4.1 to 7.4.6	

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07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153525	Higher Layer Impacts by LAA LBT Procedure	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153526	LCP Modification for LAA Scell	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153527	UL Issues for LAA Scell	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153528	More consideration on MMTEL traffic measurement	ZTE Corporation	discussion							Rel-13	FS_LTE_eMDT2			
07.08	LTE Rel-13: SI: Further MDT enhancements	No	withdrawn	Late	R2-153529	UL delay measurement in MDT	ZTE Corporation	discussion							Rel-13	FS_LTE_eMDT2			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153530	UL delay measurement in MDT	ZTE Corporation	discussion							Rel-13	FS_LTE_eMDT2			
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	noted		R2-153531	RNTI extension	Ericsson	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
10.6	UTRA Rel-12: WI: Increasing the minimum number of carriers for UE monitoring in UTRA and E-UTRA	Yes	revised		R2-153532	Increased UE carrier monitoring E-UTRA support mandatory	Ericsson	CR	25.306	12.5.0	0488		F		Rel-12	LTE_UTRA_IncMon-Core	R2-153898	moved from 4.2 to 10.6	UMTS
11.08	UTRA Rel-13: UMTS TEI13 enhancements	Yes	noted		R2-153533	Access Groups based access control enhancements	Ericsson	discussion							Rel-13	TEI13, EDCH_enh-Core		Tdoc type corrected	UMTS
11.08	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated		R2-153534	Access Groups based access control enhancements	Ericsson	CR	25.300	12.4.0	0019		B		Rel-13	TEI13, EDCH_enh-Core			UMTS
11.08	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated		R2-153535	Access Groups based access control enhancements	Ericsson	CR	25.306	12.5.0	0489		B		Rel-13	TEI13, EDCH_enh-Core			UMTS
11.08	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated		R2-153536	Access Groups based access control enhancements	Ericsson	CR	25.331	12.6.0	5781		B		Rel-13	TEI13, EDCH_enh-Core			UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	noted		R2-153537	Workplan WI Power Saving enhancements for UMTS	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		Tdoc type corrected	UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	not treated		R2-153538	eDRX RAN2 specification impact	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		Tdoc type corrected	UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	not treated		R2-153539	Introduction of extended DRX in Idle and Connected mode	Ericsson	CR	25.300	12.4.0	0020		B		Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-153540	eDRX solution in Idle mode	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		Tdoc type corrected	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-153541	Measurements and mobility with I-eDRX	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		Tdoc type corrected	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	revised		R2-153542	LS on eDRX measurements in Idle mode for UMTS	Ericsson	LS out							Rel-13	UTRA_SDATA_POWSAV-Core	R2-153896		UMTS
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Connected Mode	Yes	noted		R2-153543	eDRX solution in Connected mode	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		Tdoc type corrected	UMTS
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Connected Mode	Yes	not treated		R2-153544	Measurements and mobility with C-eDRX	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		Tdoc type corrected	UMTS
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Connected Mode	Yes	not treated		R2-153545	LS on eDRX measurements in PCH state for UMTS	Ericsson	LS out							Rel-13	UTRA_SDATA_POWSAV-Core			UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	noted		R2-153546	Quick return into power saving	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core		Tdoc type corrected	UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	revised		R2-153547	LS on quick return into PSM for UMTS	Ericsson	LS out							Rel-13	UTRA_SDATA_POWSAV-Core	R2-153897		UMTS
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153548	Consideration on Random Access for Heterogeneous TTIs in a Carrier	ETRI	discussion							Rel-13	FS_LTE_LATRED			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	noted		R2-153549	Further discussion on the user plane related issues for LTE-WLAN aggregation	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153550	Discussion on UE-to-Network Relay initiation	General Dynamics UK Limited	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	noted		R2-153551	Traffic steering method for interworking enhancement	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153552	Behaviour of the UE-to-Network relay	General Dynamics UK Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153553	Setup procedure of LTE-WLAN aggregation	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153554	Relay selection for the in-coverage remote UE	General Dynamics UK Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153555	Potential solutions for one-to-one communication addressing	General Dynamics UK Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153556	RRM measurements for LTE-WLAN aggregation and interworking enhancement	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153557	WLAN link monitoring and failure report for LTE-WLAN aggregation and interworking enhancement	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core			
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated		R2-153558	Introduction of Seamless URA_PCH to CELL_FACH transition	Ericsson	CR	25.308	13.0.0	0170		B		Rel-13	UTRA_EDL_L23-Core			UMTS
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	withdrawn		R2-153559	Discussion on acknowledgement for Sidelink grant	ASUSTEK COMPUTER (SHANGHAI)	discussion							Rel-13	TEI13			
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated		R2-153560	Introduction of Seamless URA_PCH to CELL_FACH transition	Ericsson	CR	25.319	12.3.0	0135		B		Rel-13	UTRA_EDL_L23-Core			UMTS
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153561	Clarification of intra-band non-contiguous CA capability	NTT DOCOMO, INC., Samsung	CR	36.331	10.17.0	1881		F		Rel-10	LTE_CA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153562	Clarification of intra-band non-contiguous CA capability	NTT DOCOMO, INC., Samsung	CR	36.331	11.12.0	1882		A		Rel-11	LTE_CA-Core			
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-153563	Discussion on acknowledgement for Sidelink grant	ASUSTEK COMPUTER (SHANGHAI)	discussion							Rel-13	TEI13			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153564	Clarification of intra-band non-contiguous CA capability	NTT DOCOMO, INC., Samsung	CR	36.331	12.6.0	1883		A		Rel-12	LTE_CA-Core			
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated		R2-153565	Introduction of Seamless URA_PCH to CELL_FACH transition	Ericsson	CR	25.331	12.6.0	5782		B		Rel-13	UTRA_EDL_L23-Core			UMTS
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-153566	Discussion on Random Access for Sidelink	ASUSTEK COMPUTER (SHANGHAI)	discussion							Rel-13	TEI13			
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	agreed		R2-153567	Clarification of the maximum number of bits of a single DL-SCH transport block for DL Category 16	NTT DOCOMO, INC., Huawei, Samsung, Intel Corporation	CR	36.306	12.5.0	0292		F		Rel-12	LTE_CA-Core, TEI12, LTE_SC_enh_L1-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153568	Over allocation problem on UL bearer split	NTT DOCOMO INC.	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153569	Deactivation for LAA	NTT DOCOMO INC.	discussion							Rel-13	LTE_LAA-Core			
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	noted		R2-153570	Revised Work Plan for LTE Carrier Aggregation Enhancement Beyond 5 Carriers	NTT DOCOMO INC., Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core		Tdoc type corrected	
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-153571	Activation_deactivation of PUCCH SCell	NTT DOCOMO INC.	discussion						Resubmission of R2-152424	Rel-13	LTE_CA_enh_b5C-Core		WI code missed	LTE UP
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153572	Consideration on relay UE initiation and release process	SHARP Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts

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07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	not treated		R2-153573	Draft LS on PUCCH SCell activation	NTT DOCOMO INC.	LS out						Related to R2-153571	Rel-13	LTE_CA_enh_b5C-Core	R2-153571		LTE UP
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-153574	Discussion on C-RNTI handling for CA beyond 5CCs	NTT DOCOMO INC.	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153575	QoS control in sidelink communications	Beijing Xinwei Telecom Techn.	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.4 to 7.5.4	LTE breakouts
07.10.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-153576	the issues on the C-eDRX	Beijing Xinwei Telecom Techn.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153577	Combination solution for AD MAC CE with up to 32 CCs	Beijing Xinwei Telecom Techn.	discussion								LTE_CA_enh_b5C-Core			LTE UP
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	revised		R2-153578	Performance evaluation on short TTI	ZTE Coporation	discussion							Rel-13	FS_LTE_LATRED	R2-153852		
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	agreed		R2-153579	Capturing mandatory/optional features of Rel-12 UEs	NTT DOCOMO, INC., Ericsson, Huawei	CR	36.306	12.5.0	0293		F	related to LSin R2-153022	Rel-12	LTE_SC_enh_L1-Core, LTE_UTRA_IncMon-Core			
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-153580	Improved synchronized RRC procedures	Ericsson	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-153581	Improved synchronized RRC procedures	Ericsson	CR	25.321	12.2.0	0813		B		Rel-13	UTRA_EDL_L23		NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet	UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-153582	Improved synchronized RRC procedures	Ericsson	CR	25.331	12.6.0	5783		B		Rel-13	UTRA_EDL_L23		NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet	UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	noted		R2-153583	Retrievable configuations	Ericsson	discussion							Rel-13	UTRA_EDL_L23-Core			UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	not treated		R2-153584	Retrievable configurations	Ericsson	CR	25.300	12.4.0	0021		B		Rel-13	UTRA_EDL_L23		NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet	UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	not treated		R2-153585	Retrievable configurations	Ericsson	CR	25.331	12.6.0	5784		B		Rel-13	UTRA_EDL_L23		NOTE: WI code should be "UTRA-EDL_L23-Core" in CR coversheet	UMTS
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153586	Inter-PLMN coordination for discovery transmission	TELECOM ITALIA S.p.A.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	not treated		R2-153587	PUCCH SCell activation and UL timing alignment	Alcatel-Lucent Shanghai Bell, Alcatel-Lucent	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-153588	BSR report for enhanced CA	Alcatel-Lucent Shanghai Bell, Alcatel-Lucent	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	noted		R2-153589	Further details on interworking enhancements	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core		Tdoc type corrected	
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153590	Mobility and RRM measurements for LTE-WLAN radio aggregation and interworking	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core		Tdoc type corrected	
10.7	UTRA Rel-12: Other UMTS Rel-12 WI/SIs	Yes	agreed		R2-153591	Rapporteur corrections for 25.331 RRC specification	Ericsson	CR	25.331	12.6.0	5785		D		Rel-12	TEI12			UMTS
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153592	Differentiation between PS discovery and non-PS discovery	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153593	Remaining format for eCA PHR	Alcatel-Lucent Shanghai Bell, Alcatel-Lucent	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153594	Direct Discovery on non-PCell carriers	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153595	On D2D gaps	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153596	Out of coverage discovery	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153597	Relay selection criteria for public safety discovery	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153598	Transport channel for public safety discovery	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153599	Handling collisions between communication and discovery resources	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
04.01	Joint UMTS/LTE: Rel-11 and earlier releases	Yes	noted		R2-153600	Report of [90#21] [JointTEI11] Limitation of UMTS neighbour cell lists	Huawei	report							Rel-11	TEI11		Tdoc type corrected	
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153601	Extending MAC protocol header	Ericsson	CR	36.321	12.6.0	0791		B		Rel-13	LTE_CA_enh_b5C-Core		WI code missed in Tdoc request	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153602	Extending RLC protocol header	Ericsson	CR	36.322	12.2.0	0112		B		Rel-13	LTE_CA_enh_b5C-Core		WI code missed in Tdoc request	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153603	Extending PDCP protocol header	Ericsson	CR	36.323	12.4.0	0142		B		Rel-13	LTE_CA_enh_b5C-Core		WI code missed in Tdoc request	LTE UP
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	agreed		R2-153604	The support of UL64QAM	Huawei, HiSilicon, CMCC, Qualcomm Incorporated	CR	36.331	12.6.0	1884		F		Rel-12	TEI12			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153605	Impact of carrier aggregation enhancement on L2 UP protocols	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core		WI code missed	LTE UP
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153606	Cell reselection for coverage enhanced UEs	Nokia Networks	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc type corrected	
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153607	Random access procedure for enhanced coverage UEs	Nokia Networks	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc type corrected	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153608	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.331	10.17.0	1885		C		Rel-10	TEI10	R2-153951		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153609	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.331	11.12.0	1886		A		Rel-11	TEI10	R2-153952		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153610	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.331	12.6.0	1887		A		Rel-12	TEI10	R2-153953		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153611	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.306	10.13.0	0294		C		Rel-10	TEI10	R2-153954		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153612	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.306	11.11.0	0295		A		Rel-11	TEI10	R2-153955		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153613	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.306	12.5.0	0296		A		Rel-12	TEI10	R2-153956		
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153614	Connected mobility for Rel13 UEs in EC mode	Nokia Networks	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc type corrected	
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153615	RLM/RLF for Rel13 low complexity UE or/and UE in EC mode	Nokia Networks	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc type corrected	
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	noted		R2-153616	RRC details for Rel-13 low complexity and coverage enhanced UEs	Erisson	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc source corrected	

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AI #	Agenda item	Upload ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153617	Further consideration of control plane issues for LWA	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_WLAN_radio-Core			
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	No	withdrawn		R2-153618	Running RRC CR for Rel-13 low complexity and coverage enhanced UEs	Erisson	CR	36.331	12.6.0	1888		B		Rel-13	LTE_MTCe2_L1-Core		Tdoc source corrected	
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153619	Need of UE interworking status for LTE-WiFi interwoiking	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_WLAN_radio-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	noted		R2-153620	Comparison of eDRX concepts for RRC idle mode	Erisson	discussion							Rel-13	LTE_extDRX-Core		Tdoc source corrected	LTE breakouts
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153621	Cell-specific prioritization for load balancing	Erisson	discussion							Rel-13	LTE_MC_load-Core		Tdoc source corrected	
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153622	Cell-specific prioritization for idle mode load balancing (Alt 1)	Ericsson	draftCR	36.331	12.5.0					Rel-13	LTE_MC_load-Core		source corrected	
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153623	Cell-specific prioritization for idle mode load balancing (Alt 2)	Ericsson	draftCR	36.331	12.5.0					Rel-13	LTE_MC_load-Core		source corrected	
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153624	Cell-specific prioritization for idle mode load balancing	Ericsson	draftCR	36.304	12.5.0					Rel-13	LTE_MC_load-Core		source corrected	
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153625	User preference aspects of WLAN aggregation and interworking	BlackBerry UK Limited	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153626	Relay initiation and (re)selection for Public Safety UE	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	not treated		R2-153627	Running RRC CR for Rel-13 low complexity and coverage enhanced UEs	Ericsson	draftCR	36.331	12.5.0					Rel-13	LTE_MTCe2_L1-Core		source corrected	
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153628	Priority handling for ProSE Communication	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	agreed		R2-153629	Small corrections concerning RadioResourceConfig	Samsung, Intel	CR	36.331	12.6.0	1889		F		Rel-12	LTE_CA-Core, LTE_SC_enh_dualC-Core			
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	not treated		R2-153630	Data Volume measurement for RAN Sharing	Nokia Networks	discussion							Rel-13	RSE-RAN_LTE			
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	not treated		R2-153631	Draft Reply LS on RAN Sharing Enhancements for LTE	Nokia Networks	discussion							Rel-13	RSE-RAN_LTE		Tdoc type corrected	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	rejected		R2-153632	Clarification on (UMTS) cells the UE should report upon reportStrongestForSON and reportCGI	Samsung	CR	36.331	12.6.0	1890		F		Rel-12	SONenh_LTE-Core			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	noted		R2-153633	Handling of (SL) field critically extended in release	Samsung	discussion							Rel-12	TEI12, LTE_D2D_Prox-Core			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	revised		R2-153634	Introducing general handling and guidelines concerning critical extensions within a release	Samsung	CR	36.331	12.6.0	1891		F		Rel-12	TEI12, LTE_D2D_Prox-Core	R2-153933		
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153635	SC-PTM Configuration	NEC	discussion							Rel-13	LTE_SC_PTM-Core			
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	not treated		R2-153636	Change of PUCCH SCell	Samsung	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153637	ROHC and ciphering for SC-PTM	NEC	discussion							Rel-13	LTE_SC_PTM-Core			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153638	Access barring mechanisms for MTC UEs	NEC	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153639	TP for TR 36.880	Huawei, HiSilicon, CMCC	pCR	36.880	0.3.0					Rel-13	FS_LTE_eMDT2			
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153640	Paging transmission to Rel-13 MTC UEs	NEC	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153641	SIB content relevant	NEC	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153642	WLAN measurement reporting	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153643	Layer-3 filtering for WLAN measurements	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153644	Introducing WLAN measurements	Ericsson	CR	36.331	12.6.0	1892		B		Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153645	Connection failure report	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	noted		R2-153646	Further discussion on WLAN interworking for Rel-13	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153647	Threshold based WLAN interworking	Ericsson	CR	36.331	12.6.0	1893		B		Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153648	Parameter handling for WLAN interworking	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153649	Parameter handling for WLAN interworking	Ericsson	CR	36.331	12.6.0	1894		B		Rel-13	LTE_WLAN_radio-Core			
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153650	Parameter handling for WLAN interworking	Ericsson	CR	36.304	12.5.0	0274		B		Rel-13	LTE_WLAN_radio-Core			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-153651	Extension of BSR for CA enhancements beyond 5 CC	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153652	New BSR mapping table for Carrier Aggregation enhancements beyond 5 CCs	Ericsson	CR	36.321	12.6.0	0792		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	revised		R2-153653	Running MAC CR for Carrier Aggregation enhancements	Ericsson	CR	36.321	12.6.0	0793		B		Rel-13	LTE_CA_enh_b5C-Core	R2-153947	wrong Tdoc number used; should be "draftCR"	
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-153654	LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core			LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	rejected		R2-153655	CR for LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs	Ericsson	CR	36.321	12.6.0	0794		B		Rel-13	LTE_CA_enh_b5C-Core			LTE UP
06.02.08	LTE: Rel-12: WI: FDD/TDD Carrier Aggregation	Yes	postponed		R2-153656	Refinement of requirements for TA difference in TDD-FDD CA	Ericsson	discussion							Rel-12	LTE_CA_TDD_FDD-Core		moved from 6.1.1 to 6.2.8	
06.02.08	LTE: Rel-12: WI: FDD/TDD Carrier Aggregation	Yes	not treated		R2-153657	Refinement of requirements for TA difference in TDD-FDD CA	Ericsson	CR	36.300	12.6.0	0789		F		Rel-12	LTE_CA_TDD_FDD-Core		moved from 6.1.1 to 6.2.8	
06.02.08	LTE: Rel-12: WI: FDD/TDD Carrier Aggregation	Yes	not treated		R2-153658	Refinement of requirements for TA difference in TDD-FDD CA	Ericsson	CR	36.300	13.0.0	0790		A		Rel-13	LTE_CA_TDD_FDD-Core		moved from 6.1.1 to 6.2.8	
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-153659	RSSI measurement reporting for LAA	Ericsson	discussion							Rel-13	LTE_LAA-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153660	Introducing RSSI measurements for LAA	Ericsson	CR	36.331	12.6.0	1895		B		Rel-13	LTE_LAA-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153661	RRM measurement framework for WLAN aggegation/ interworking	Samsung	discussion							Rel-13	LTE_WLAN_radio-Core		moved from 7.6.2.1 to 7.6.4	
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	revised		R2-153662	Corrections for reporting and cancellation of SL BSR	Huawei, HiSilicon	CR	36.321	12.6.0	0795		F		Rel-12	LTE_D2D_Prox-Core	R2-153863		LTE UP
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	noted		R2-153663	WLAN aggregation, Review of differences to DC	Samsung	discussion							Rel-13	LTE_WLAN_radio-Core			
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	noted		R2-153664	RAN Sharing enhancements resource usage reporting	NEC	discussion						Related to incoming LS R2-153016	Rel-13	RSE-RAN_LTE	R2-153016		
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153665	Discussion on ProSe Discovery in Partial and Outside Network Coverage	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts

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AI #	Agenda item	Upl oad ed	status	Late	Tdoc	Title	Source	Type:	Spec	Versio n #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-153666	Scope, characteristics and high level design of RSSI measurement	Samsung	discussion							Rel-13	LTE_LAA-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153667	Scope and main characteristics of idle load balancing solution	Samsung	discussion							Rel-13	LTE_MC_load-Core			
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153668	LS on ProSe authorization for inter-PLMN	CATT	LS out							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153669	Discussion on Prose Authorization for Inter-PLMN	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153670	Priority for ProSe Communication	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153671	Measurement configurations for LAA.	Sharp	discussion							Rel-13	LTE_LAA-Core			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153672	Relay Initiation	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153673	Considerations on RACH for LC-MTC	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_MTCe2_L1			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153674	Reply LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay	CATT	LS out						Draft reply LS to the LS from SA2 (S2-152695)	Rel-13	LTE_eD2D_Prox-Core	S2-152695	moved from 7.5.5 to 7.5.4	LTE breakouts
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153675	Signalling consideratrions for relay UE intiation	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153676	Authorization of out of coverage remote UEs for UE-to-Network relay	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	noted		R2-153677	Narrowband SIB1x Contents	Alcatel-Lucent Telecom Ltd	discussion							Rel-13	LTE_MTCe2_L1			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated	Late	R2-153678	Further discusion on some relay related aspects	Samsung	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153679	Discussion on additionalSpectrumEmission	HTC Corporation	discussion							Rel-10	LTE_CA-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153680	Considerations for establishing a maximum idle mode eDRX time	Sierra Wireless, S.A.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	No	withdrawn		R2-153681	Considerations on Layer-2 ID Collision	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153682	Considerations on Layer-2 ID Collision	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	revised		R2-153683	Flow control in LTE-WLAN Aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core	R2-153843	wrong Tdoc number used	
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153684	Considerations for Paging Occasion Change Indication in eDRX	Sierra Wireless, S.A.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	revised		R2-153685	User plane aspects of LTE-WLAN aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core	R2-153844	wrong Tdoc number used	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153686	Correction to additionalSpectrumEmission – Option 1	HTC Corporation	CR	36.331	10.17.0	1896		F		Rel-10	TEI10, LTE_CA-Core	R2-153923	NOTE: TEI10 should be removed since LTE-CA-Core was a REL-10 WI	
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-153687	Cell lists for Ax events	Ericsson	discussion							Rel-13	TEI13		Tdoc type corrected	
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-153688	Considerations on EVSoCS error protection	Qualcomm Incorporated	discussion							Rel-13	EVSoCS_UTRAN-Core		noted at Joint RAN1 and RAN2 EVS session	UMTS
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153689	Mobility procedures for LTE-WLAN aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core			
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-153690	Considerations on EVSoCS mode sets and RABs	Qualcomm Incorporated	discussion							Rel-13	EVSoCS_UTRAN-Core		noted at Joint RAN1 and RAN2 EVS session	UMTS
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-153691	Examples of EVS CS RABs and configuration parameters	Qualcomm Incorporated	discussion							Rel-13	EVSoCS_UTRAN-Core		noted at Joint RAN1 and RAN2 EVS session	UMTS
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153692	Correction to additionalSpectrumEmission – Option 2	HTC Corporation	CR	36.331	10.17.0	1897		F		Rel-10	TEI10, LTE_CA-Core		NOTE: TEI10 should be removed since LTE-CA-Core was a REL-10 WI	
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153693	Signalling flows for LTE-WLAN aggregation over Xw and RRC	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core			
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-153694	Draft Reply LS on EVSoCS	Qualcomm Incorporated	LS out							Rel-13	EVSoCS_UTRAN		noted at Joint RAN1 and RAN2 EVS session	UMTS
11.06	UTRA Rel-13: WI: HSPA Dual-Band UL carrier aggregation	Yes	noted		R2-153695	RAN2 impacts due to the introduction of DB-DC-HSUPA	Qualcomm Incorporated	discussion							Rel-13	HSUPA_DB_MC-Core			UMTS
11.06	UTRA Rel-13: WI: HSPA Dual-Band UL carrier aggregation	Yes	not treated	Late	R2-153696	Draft Reply LS on DB-DC-HSUPA	Qualcomm Incorporated	LS out							Rel-13	HSUPA_DB_MC-Core			UMTS
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153697	Considerations on RAN based and CN based approaches for extended idle mode DRX	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153698	Correction to additionalSpectrumEmission – Option 3	HTC Corporation	CR	36.331	10.17.0	1898		F		Rel-10	TEI10, LTE_CA-Core		NOTE: TEI10 should be removed since LTE-CA-Core was a REL-10 WI	
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153699	LWA and UE mobility	NEC	discussion							Rel-13	LTE_WLAN_radio-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153700	Discussion on solutions for extended idle mode DRX	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153701	Discussion on reduction of handover interruption	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	FS_LTE_LATRED			
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153702	Discussion on solutions for latency reduction	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	FS_LTE_LATRED			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153703	Discussion on UL bearer split for Dual Connectivity: QoS guarantee	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153704	Discussion on UL bearer split for Dual connectivity: BSR triggers and timers	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	postponed		R2-153705	UTRAN-to-EUTRAN HO transfer of UE EUTRA capabilities	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	discussion							Rel-12	TEI12		Tdoc info missed	
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	not treated		R2-153706	Enabling UTRAN to E-UTRAN HO without forwarding UE-EUTRA-Capability	Alcatel-Lucent Telecom Ltd	draftCR	36.331	12.5.0					Rel-12	TEI12		Tdoc type should be "CR"	
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	not treated		R2-153707	White-list for A4 and A6 event triggering	Ericsson	CR	36.331	12.6.0	1899		C		Rel-13	TEI13			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-153708	Sidelink discovery related corrections	Nokia Networks	CR	36.331	12.6.0	1900		F		Rel-12	LTE_D2D_Prox-Core			
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	rejected		R2-153709	Events that trigger sidelink BSR	Nokia Networks	CR	36.321	12.6.0	0796		F		Rel-12	LTE_D2D_Prox-Core			LTE UP

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	not treated		R2-153710	White-list and black-list for Ax event triggering	Ericsson	CR	36.331	12.6.0	1901		C		Rel-13	TEI13			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153711	SIB for Rel-13 low complexity and coverage enhanced UEs	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153712	Efficient Solution for SC-PTM Service Continuity	Nokia Networks	discussion							Rel-13	LTE_SC_PTM-Core			
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-153713	Connected mode Mobility for LC and CE	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc type corrected	
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153714	Relay Selection while in E-UTRAN coverage	Nokia Networks	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-153715	Inter carrier ProSe discovery	Nokia Networks	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153716	MIB for Rel-13 low complexity and coverage enhanced UEs	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	noted		R2-153717	Random access for Rel-13 low complexity and enhanced coverage UEs	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153718	Paging mechanism for Rel-13 low complexity and coverage enhanced UEs	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153719	SI update for Rel-13 low complexity and coverage enhanced UEs	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153720	Prioritization of sidelink transmissions with pre-emption via resource pools	SHARP	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	noted		R2-153721	HARQ and TTI bundling for Rel-13 low complexity and coverage enhanced UEs	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core			
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	noted		R2-153722	Further discussion on NAICS capability subset definition	Qualcomm India	discussion							Rel-12	LTE_NAICS-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153723	User Plane Architecture solutions based on DuCo Solution 3C	BROADCOM CORPORATION	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153724	User Plane Architecture solutions based on DuCo Solution 2C	BROADCOM CORPORATION	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153725	Discovery and selection of a network that provides cellular – WLAN aggregation	BROADCOM CORPORATION	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153726	Discussion on LWA CP/UP termination	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153727	Providing per bearer QoS handling over WLAN	BROADCOM CORPORATION	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153728	On the need of separating user plane solutions for LTE-WLAN Radio Level Integration based on Dual Connectivity (DC) 3C and 2C	BROADCOM CORPORATION	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153729	Priority handling for Sidelink Direct Communication	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	rejected		R2-153730	Correction to SCG reconfiguration	QUALCOMM India	CR	36.331	12.6.0	1902		F		Rel-12	LTE_SC_enh_dualC-Core	R2-153932		
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153731	Connection establishment for relay operation	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153732	Relay UE initiation and discovery	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153733	Signalling for UL-CA IDC interference issue	Ericsson	discussion							Rel-11	LTE_CA-Core			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	revised		R2-153734	Running stage 2 CR TS 36.300 to capture agreement on eD2D	Qualcomm Incorporated	draftCR	36.300	13.0.0				two week email discussion [91#16][LTE/eD2D] planned	Rel-13	LTE_eD2D_Prox-Core	R2-153890		LTE breakouts
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153735	Design Aspects of IDLE Mode eDRX	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_extDRX-Core		Tdoc type corrected	LTE breakouts
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153736	Remaining open issues related to Random Access procedure	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc type corrected	
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153737	Remaining Issues on Paging for MTC UE	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_MTCe2_L1-Core		Tdoc type corrected	
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153738	Draft LS on Intra-PLMN & Inter-PLMN D2D discovery	Qualcomm Incorporated	LS out							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153739	Priorities and Pre-emption for D2D communications	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_eD2D_Prox-Core		Tdoc type corrected	LTE breakouts
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-153740	Considerations on capability signalling enhancements for B5C	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153741	Draft response LS on D2D priority handling	Qualcomm Incorporated	LS out							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153742	Out-of-Coverage discovery for Public Safety	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153743	Draft Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay	Qualcomm Incorporated	LS out							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153744	MCPTT service over relays: In-coverage to Out-of-coverage transition	BlackBerry UK Limited	discussion							Rel-13	LTE_eD2D_Prox-Core		Tdoc type corrected	LTE breakouts
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	noted		R2-153745	Understanding DRX operation with LAA	Motorola Mobility UK Ltd.	discussion							Rel-13	LTE_LAA-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153746	Options for Reducing Active Time with LAA	Motorola Mobility UK Ltd.	discussion							Rel-13	LTE_LAA-Core			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153747	MCPTT service over relays: Out-of-coverage to In-coverage transition	BlackBerry UK Limited	discussion							Rel-13	LTE_eD2D_Prox-Core		Tdoc type corrected	LTE breakouts
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-153748	Enhanced synchronous RRC re-configuration procedure	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153749	In coverage MCPTT UEs and UE-to-Network relaying	BlackBerry UK Limited	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	noted		R2-153750	Autonomous state transition	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		Tdoc type corrected	UMTS
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153751	Relay UE Selection and Reselection Mechanisms	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	rejected		R2-153752	Clarification of cancellation of sidelink BSR	Ericsson	CR	36.321	12.6.0	0797		F		Rel-12	LTE_D2D_Prox-Core			LTE UP
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-153753	Inter Frequency and Inter PLMN Discovery	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153754	WLAN Reliability with LTE+WLAN Aggregation in LTE R13	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_WLAN_radio-Core			

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07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153755	Quality-of-Service (QoS) with LTE+WLAN Aggregation in LTE R13	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_WLAN_radio-Core			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153756	MIB and SIB Considerations for MTc Low Cost and Enhanced Coverage	Fujitsu	discussion							Rel-13	LTE_MTCe2_L1-Core			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-153757	Signalling aspects of ACDC in E-UTRAN	Ericsson	discussion							Rel-13	ACDC-RAN-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153758	PDCP data transfer procedure for uplink bearer split	Ericsson	discussion							Rel-13	LTE_dualC_enh-Core			LTE UP
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153759	Bearer Architecture for LTE+WLAN Aggregation in LTE R13	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_WLAN_radio-Core			
07.09	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	not treated		R2-153760	PDCP data transfer procedure for uplink bearer split	Ericsson	CR	36.323	12.4.0	0143		B		Rel-13	LTE_dualC_enh-Core			LTE UP
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	noted		R2-153761	Additional details of TBS protocol impacts	NextNav	discussion							Rel-13	FS_UTRA_LTE_iPos_enh		Some Tdoc info missed	
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	revised		R2-153762	TP for TR37.857 for TBS Protocol Impacts	NextNav	pCR	37.857						Rel-13	FS_UTRA_LTE_iPos_enh	R2-153920		
07.06.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Organizational	Yes	revised		R2-153763	Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement	Intel Corporation, China Telecom, Qualcomm Incorporated	CR	36.300	13.0.0	0791		B		Rel-13	LTE_WLAN_radio-Core	R2-153941	CR number missed in the CR coverpage; wrong Tdoc type used	
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	noted		R2-153764	Report of email discussion [90#25][LTE/ProSe] Relay UE initiation, discovery and selection/re-selection	ZTE (rapporteur)	report						Report of e-mail discussion [90#25]	Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153765	Discussion on relay initiation and discovery	ZTE, Ericsson, Intel, Interdigital	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	noted		R2-153766	Discussion on Remote UE's Relay discovery, selection and reselection	ZTE, Ericsson, Interdigital, Telecom Italia	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153767	Discussion on the traffic switch between Uu and PC5	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153768	eNB involvement in remote UEs authorization and connection establishment	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153769	Considerations on the ProSe Layer-2 ID conflict issue	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.3 to 7.5.1.4	LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153770	Priority in UE-to-Network relay	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.4 to 7.5.4	LTE breakouts
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-153771	RAN2 aspects of supporting out-of-coverage discovery	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153772	On ProSe Discovery for inter-frequency and inter-PLMN	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153773	Issues on Priority Handling	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	rejected		R2-153774	Corrections on Prose BSR Report and SL MAC CE	ZTE	CR	36.321	12.6.0	0798		F		Rel-12	LTE_D2D_Prox-Core			LTE UP
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-153775	Continuous vs one-shot distribution mechanism for reselection	Kyocera	discussion							Rel-13	LTE_MC_load-Core			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-153776	Detailed solution of one-shot re-distribution mechanism	Kyocera Corporation	discussion							Rel-13	LTE_MC_load-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153777	Details of radio interface enhancements for SC-PTM transmission	Kyocera	discussion							Rel-13	LTE_SC_PTM-Core			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-153778	SIB1 scheduling for Rel-13 MTC	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153779	LAA SCell Activation and Deactivation	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_LAA-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153780	Update to DRX Behaviour in support of Asynchronous UL HARQ	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_LAA-Core			
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-153781	SC-PTM Configuration	Qualcomm Incorporated	discussion							Rel-13	LTE_SC_PTM-Core			
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153782	SC-PTM Service Continuity	Qualcomm Incorporated	discussion							Rel-13	LTE_SC_PTM-Core			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153783	UL delay measurement	Qualcomm Incorporated	discussion							Rel-13	FS_LTE_eMDT2			
07.08	LTE Rel-13: SI: Further MDT enhancements	No	withdrawn		R2-153784	UL delay measurement	Qualcomm Incorporated	discussion							Rel-13	FS_LTE_eMDT2			
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	not treated		R2-153785	Integrating MTSI QoE Metrics into MDT	Qualcomm Incorporated	discussion							Rel-13	FS_LTE_eMDT2			
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153786	Initiation of relay function	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153787	When to switch data transmission path	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153788	Connection establishment of remote UE	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	not treated		R2-153789	CE level change procedure	LG Electronics Inc.	discussion							Rel-13	LTE_MTCe2_L1-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153790	In-Device Coexistence for UL inter-band CA interference due to intermodulation	QUALCOMM India	CR	36.331	11.12.0	1903		F		Rel-11	SPIA_IDC_LTE-Core			
06.01.02	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: UP	Yes	revised		R2-153791	Correction on Type 2 PH reporting	Intel Corporation	CR	36.321	12.6.0	0799		F		Rel-12	LTE_CA-Core	R2-153862	NOTE: TEI12 should be added since LTE-CA-Core was a REL-10 WI	LTE UP
07.01.1	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Organizational	Yes	noted		R2-153792	RAN2 Work Plan of Licensed-Assisted Access to Unlicensed Spectrum	Huawei, Ericsson	discussion							Rel-13	LTE_LAA-Core			
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-153793	Hyper-SFN vs Timer based eDRX	MediaTek Inc.	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-153794	ANR in case of MFBI	Huawei, Bell Mobility, HiSilicon	discussion							Rel-8	TEI8			
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	noted		R2-153795	System Information Change	MediaTek Inc.	discussion							Rel-13	LTE_MTCe2_L1-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153796	ANR in case of MFBI	Huawei, Bell Mobility, HiSilicon	CR	36.331	12.6.0	1904		F		Rel-12	TEI12			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	No	withdrawn	Late	R2-153797	UE redistribution for load balancing	MediaTek Inc.	discussion							Rel-13	LTE_MC_load-Core			

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AI #	Agenda item	Upl oad ed	status	Late	Tdoc	Title	Source	Type:	Spec	Versio n #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-153798	On acknowledging WLAN aggregation and traffic steering commands	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153799	Discussion on LAA SCell Activation and Deactivation	KT Corporation	discussion							Rel-13	LTE_LAA-Core			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153800	A simplified IDC enhancement for UL inter-band CA IMD interference to GNSS	QUALCOMM India	discussion							Rel-11	SPIA_IDC_LTE-Core			
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153801	Inter-carrier and Inter-PLMN Discovery issues	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153802	RAR transmission for Rel-13 MTC	KT Corp.	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153803	Analysis on the Knowledge of Remote UE by eNB	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153804	Details of LWA Adaptation Layer	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153805	Missing Packet due to Half-duplex in PC5	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.4 to 7.5.4	LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153806	Protocol Stacks for UE-to-Network Relay	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.4 to 7.5.4	LTE breakouts
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-153807	DRS measurements in LAA	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_LAA-Core			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153808	Relay Selection Issues	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153809	Layer-2 addressing for ProSe one-to-one communication	ETRI	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153810	Effect of UE and eNB processing times on TCP performance	Intel Corporation	discussion							Rel-13	FS_LTE_LATRED			
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	revised		R2-153811	Clarification of Beacon RSSI Encoding	QUALCOMM CDMA Technologies	CR	36.331	12.6.0	1905		F		Rel-12	UTRA_LTE_WLAN_interw-Core	R2-153857	NOTE: CR number missed in CR coversheet	
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	not treated		R2-153812	UE Handling of RAN Rules for RAN-assisted WLAN Interworking	QUALCOMM CDMA Technologies	discussion							Rel-12	UTRA_LTE_WLAN_interw-Core		Tdoc info missed	
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153813	Policing, Authorization, and Charging for LTE/WLAN Aggregation	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153814	LTE/WLAN aggregation mobility aspects	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-153815	RSSI measurement for unlicensed frequency	LG Electronics Inc.	discussion							Rel-13	LTE_LAA-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153816	The coexistence of LTE/WLAN aggregation and Rel-12 interworking	LG Electronics Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153817	WLAN measurement framewor	LG Electronics Inc.	discussion							Rel-13	LTE_WLAN_radio-Core			
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-153818	SC-PTM service continuity in RRC CONNECTED	LG Electronics Inc.	discussion							Rel-13	LTE_SC_PTM-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated		R2-153819	Signaling for LTE/WLAN Aggregation	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	noted		R2-153820	WLAN Selection and Mobility	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_WLAN_radio-Core			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-153821	UE Measurements of WLAN for LWA and Interworking Enhancement	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_WLAN_radio-Core			
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-153822	Connection Establishment for UE-to-Network Relays	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_eD2D_Prox-Core		Tdoc type corrected	LTE breakouts
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153823	Considerations on latency reduction solutions based on pre-grant procedure for LTE	KDDI Corporation	discussion							Rel-13	FS_LTE_LATRED			
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153824	Cell selection and measurements for non-PCell discovery	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153825	Discovery on non-primary frequency	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-153826	Inter-cell relay selection	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-153827	NAS operation by remote UE	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-153828	Support of pre-emption	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153829	Prioritization of PC5-S	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core		moved from 7.5.1.4 to 7.5.4	LTE breakouts
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-153830	Relay Selection Process and Radio Condition Evaluation	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153831	sidelink gap for discovery	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core			LTE breakouts
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-153832	Random Access considerations for Rel13 eMTC	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core			
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	revised	Late	R2-153833	Clarification for NAICS capability signalling	Nokia Networks	CR	36.331	12.6.0	1906		F	Outcome CR of the e-mail discussion [90#24].	Rel-12	LTE_NAICS-Core	R2-153937	WI code missed in Tdoc request	
15	Any other business	Yes	not treated		R2-153834	Reuse of LTE L2/L3 layers for Cellular IoT	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Ericsson LM, Mediatek Inc., Panasonic, Sierra Wireless SA, ZTE Corporation, Nokia Networks, Marvell, Intel Corporation, Sequans, Gemalto	discussion												
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-153835	Further considerations on paging for Rel. 13 eMTC	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core			
07.10.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-153836	Extended DRX in connected mode	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_extDRX-Core			LTE breakouts

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07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153837	System performance with shorter TTI	QUALCOMM CDMA Technologies	discussion							Rel-13	FS_LTE_LATRED		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-153838	CR for IDC signalling enhancement for UL CA	Ericsson	draftCR	36.331	12.5.0					Rel-12	SPIA_IDC_LTE-Core		Tdoc type should be "CR"
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-153839	C-DRX for B5C	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_CA_enh_b5C-Core		WI code missed
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	revised		R2-153840	Considerations on DRX procedure for LAA-LTE	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_LAA-Core	R2-153860	
15	Any other business	Yes	not treated	Late	R2-153841	CIoT – Normative work plan and potential meeting schedule	Vodafone Group plc	other						only for Info	Rel-13			
15	Any other business	Yes	not treated	Late	R2-153842	Draft WID proposal for Clean Slate Cellular IoT (For Information only)	Vodafone Group plc	other						only for Info	Rel-13			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	No	withdrawn		R2-153843	Flow control in LTE-WLAN Aggregation	Ericsson	discussion						revision of R2-153683	Rel-13	LTE_WLAN_radio-Core	R2-153683	
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	No	withdrawn		R2-153844	User plane aspects of LTE-WLAN aggregation	Ericsson	discussion						revision of R2-153685	Rel-13	LTE_WLAN_radio-Core	R2-153685	
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	noted		R2-153845	Latency reduction for uplink signalling traffic	Nokia Networks	discussion						revision of R2-153117	Rel-13	UTRA_EDL_L23-Core	R2-153117	
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: Control Plane Architecture and Functionality	Yes	not treated	Late	R2-153846	WLAN aggregation and interworking mobility procedures	BlackBerry UK Limited	discussion							Rel-13	LTE_WLAN_radio-Core		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed	Late	R2-153847	MSI with zero length	Samsung	discussion							Rel-13	MBMS_LTE_enh-Core		
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated	Late	R2-153848	Draft LS on inter-PLMN sidelink discovery transmission	Huawei, HiSilicon	LS out							Rel-13	LTE_eD2D_Prox-Core		
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	noted	Late	R2-153849	Enhanced Coverage Optimization use case	Nokia Networks	discussion							Rel-13	FS_LTE_eMDT2		
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-153850	Signaling Aspects of Gap for Discovery Reception	Samsung Electronics Co., Ltd	discussion						revision of R2-153096	Rel-13	LTE_eD2D_Prox-Core	R2-153096	
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153851	Evaluation on the gains provided by one symbol length TTI	Huawei, HiSilicon	discussion						revision of R2-153376	Rel-13	FS_LTE_LATRED	R2-153376	
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	not treated		R2-153852	Performance evaluation on short TTI	ZTE Corporation	discussion						revision of R2-153578	Rel-13	FS_LTE_LATRED	R2-153578	
03.1	LSin: Joint UMTS/LTE relevance	Yes	revised		R2-153853	Draft reply LS on paging co-ordination for extended idle mode DRX (to: SA2, RAN3; cc: -; contact: Qualcomm)	Qualcomm	LS out						to: SA2, RAN3; cc: -; reply to S4-152697 = R2-153032	Rel-13	eDRX	R2-153032, R2-153888	
03.1	LSin: Joint UMTS/LTE relevance	Yes	revised		R2-153854	LS on bitrate variations and handling in RAN (to: SA4; cc: -; contact: Ericsson)	Ericsson	LS out						to: SA4	Rel-13	QOSE2EMTSI	R2-153036, R2-153916	
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	postponed		R2-153855	Draft reply LS on UE Handling of RAN Rules for WLAN Interworking (to: SA2; cc: CT1; contact: Qualcomm)	Qualcomm	LS out						to: SA2; cc: CT1	Rel-12	TEI12	R2-153028	
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	revised		R2-153856	Clarification on cell selection sequence upon leaving RRC_CONNECTED	HTC Corporation	CR	36.331	12.6.0	1880	1	F		Rel-12	UTRA_LTE_WLAN_interw-Core	R2-153508, R2-153917	
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	revised		R2-153857	Clarification of Beacon RSSI Encoding	QUALCOMM CDMA Technologies	CR	36.331	12.6.0	1905	1	F		Rel-12	UTRA_LTE_WLAN_interw-Core	R2-153811, R2-153875	
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	revised		R2-153858	Draft Reply LS on ACDC mechanism (to: CT1, SA1; cc:-; contact: LGE)	LG Electronics Inc.	LS out							Rel-13	ACDC-RAN-Core	R2-153876	
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	revised		R2-153859	Signalling Protocol Options for WiFi, BT and Barometric Sensor Positioning	Qualcomm Incorporated	pCR	37.857						Rel-13	FS_UTRA_LTE_iPos_enh	R2-153877	
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-153860	Considerations on DRX procedure for LAA-LTE	QUALCOMM CDMA Technologies	discussion						revision of R2-153840	Rel-13	LTE_LAA-Core	R2-153840	
13.1.1	LTE breakout session; Report from the User Plane session	Yes	agreed		R2-153861	Report of the LTE UP ad hoc meeting	LG Electronics (Vice-Chairman)	Report						UP = User Plane				
06.01.02	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: UP	Yes	agreed		R2-153862	Correction on Type 2 PH reporting	Intel Corporation	CR	36.321	12.6.0	0799	1	F		Rel-12	TEI12, LTE_CA-Core	R2-153791	
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	agreed		R2-153863	Corrections for reporting and cancellation of SL BSR	Huawei, HiSilicon	CR	36.321	12.6.0	0795	1	F		Rel-12	LTE_D2D_Prox-Core	R2-153662	
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	agreed		R2-153864	Corrections to Sidelink in MAC	Intel Corporation	CR	36.321	12.6.0	0785	1	F		Rel-12	LTE_D2D_Prox-Core	R2-153272	
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	agreed		R2-153865	Miscellaneous corrections on Sidelink	ASUSTeK	CR	36.321	12.6.0	0790	1	F		Rel-12	LTE_D2D_Prox-Core	R2-153519	
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	revised		R2-153866	LS on extension to field length of PDCP Sequence Number (to: RAN3, CT4, SA3; cc: -; contact: Nokia Networks)	Nokia Networks	LS out						to: RAN3, CT4, SA3	Rel-13	LTE_CA_enh_b5C-Core	R2-153171, R2-153873	
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	No	withdrawn		R2-153867	Clarification for NAICS operation with TM10	Nokia Networks	CR	36.331	12.6.0	1910		F		Rel-12	LTE_NAICS-Core		
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	revised		R2-153868	Draft reply LS on RAN Sharing Enhancements for LTE (to: RAN3, SA5; cc: SA1; contact: Nokia Networks)	Nokia Networks	LS out						reply to R3-151316	Rel-13	RSE-RAN_LTE-Core	R2-153016, R2-153911	
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	agreed		R2-153869	TS36.302 rapporteur's cleanup	Alcatel-Lucent	CR	36.302	12.4.0	0061	1	F		Rel-12	TEI12	R2-153350	
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	revised		R2-153870	Paging optimization	Huawei, HiSilicon	CR	36.331	12.6.0	1873	1	B	will not submitted to TSG	Rel-13	TEI13	R2-153466, R2-153912	
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	revised		R2-153871	Draft Response LS on Paging Optimization considering supported frequency bands (to: RAN3, SA2; cc: -; contact: Huawei)	Huawei	LS out						reply LS to R2-152010/R3-150889	Rel-12	TEI12, LC_MTC_LTE-Core, LTE_MTCe2_L1-Core	R2-153474, R2-153913	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153872	CR for IDC signalling enhancement for UL CA	Ericsson, Nokia Networks, NTT DOCOMO, INC	CR	36.331	12.6.0	1911		F	one week email discussion [91#04][LTE/IDC] planned	Rel-12	SPIA_IDC_LTE-Core, TEI12	R2-153838, R2-153880	
13.1.1	LTE breakout session; Report from the User Plane session	Yes	agreed		R2-153873	LS on extension to field length of PDCP Sequence Number (to: RAN3, CT4; cc: SA3; contact: Nokia Networks)	RAN2	LS out							Rel-13	LTE_CA_enh_b5C-Core	R2-153866	
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	agreed		R2-153874	Clarification of Beacon RSSI Encoding	Qualcomm Incorporated	CR	25.331	12.6.0	5786		F		Rel-12	UTRA_LTE_WLAN_interw-Core		
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	agreed		R2-153875	Clarification of Beacon RSSI Encoding	Qualcomm Incorporated	CR	36.331	12.6.0	1905	2	F		Rel-12	UTRA_LTE_WLAN_interw-Core	R2-153857	
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	agreed		R2-153876	Reply LS on ACDC mechanism (to: CT1, SA1; cc:-; contact: LGE)	RAN2	LS out						reply to R2-153041 = C1-153278, R2-153044 = S1-152406	Rel-13	ACDC-RAN-Core	R2-153858	
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	agreed		R2-153877	Signalling Protocol Options for WiFi, BT and Barometric Sensor Positioning	Qualcomm Incorporated	pCR	37.857						Rel-13	FS_UTRA_LTE_iPos_enh	R2-153859	

UMTS

LTE breakouts

LTE breakouts

LTE UP

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LTE UP

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment	
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	agreed		R2-153878	WLAN-aided indoor positioning with FTM	Intel Corporation	pCR	37.857						Rel-13	FS_UTRA_LTE_iPos_enh	R2-153512		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153879	CR for IDC signalling enhancement for UL CA	Ericsson, Nokia Networks, NTT DOCOMO, INC., Samsung	CR	36.331	11.12.0	1913		C	result of one week email discussion [91#04][LTE/IDC]	Rel-11	SPIA_IDC_LTE-Core	R2-153872		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153880	CR for IDC signalling enhancement for UL CA	Ericsson, Nokia Networks, NTT DOCOMO, INC., Samsung	CR	36.331	12.6.0	1911	1	A	result of one week email discussion [91#04][LTE/IDC]	Rel-12	SPIA_IDC_LTE-Core	R2-153872		
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	revised		R2-153881	Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (to: SA2; cc: RAN1; contact: Qualcomm)	Qualcomm	LS out						from RAN2 to: SA2 cc: RAN1; reply to R2-153030 = S2-152695	Rel-13	eProSe-Ext-SA2	S2-152695, R2-153030, R2-153887	moved from 3.2 to 7.5.4	LTE breakouts
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	revised		R2-153882	LS on extended DRX (to: RAN4; cc: -; contact: Media Tek)	MediaTek Inc.	LS out							Rel-13	LTE_extDRX-Core	R2-153915		LTE breakouts
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	revised		R2-153883	Draft LS on Inter-PLMN sidelink discovery transmission (to: SA2, CT1; cc: RAN3; contact: Huawei)	Huawei	LS out							Rel-13	LTE_eD2D_Prox-Core	R2-153886		LTE breakouts
		No			R2-153055	Void													LTE breakouts
13.1.1	LTE breakout session; Report from the User Plane session	Yes	agreed		R2-153885	Report of the LTE break-out session (ProSe and eDRX)	Interdigital (Vice-Chairman)	Report											
13.1.1	LTE breakout session; Report from the User Plane session	Yes	agreed		R2-153886	LS on Inter-PLMN sidelink discovery transmission (to: SA2, CT1; cc: RAN3; contact: Huawei)	RAN2	LS out							Rel-13	LTE_eD2D_Prox-Core	R2-153883		
13.1.1	LTE breakout session; Report from the User Plane session	Yes	agreed		R2-153887	Response LS on usage of ProSe Per-Packet Priority in ProSe UE-Network Relay (to: SA2; cc: RAN1; contact: Qualcomm)	RAN2	LS out						reply to R2-153030 = S2-152695	Rel-13	eProSe-Ext-SA2	R2-153881		
13.1.1	LTE breakout session; Report from the User Plane session	Yes	revised		R2-153888	Draft reply LS on paging co-ordination for extended idle mode DRX (to: SA2, RAN3; cc: -; contact: Qualcomm)	Qualcomm	LS out						to: SA2, RAN3; cc: -; reply to S4-152697 = R2-153032	Rel-13	LTE_extDRX-Core	R2-153853, R2-153909		
07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	endorsed		R2-153889	Introduction of SC-PTM stage2	Huawei, HiSilicon	draftCR	36.300	13.0.0			B	result of two week email discussion [91#13][LTE/SC-PTM]	Rel-13	LTE_SC_PTM-Core	R2-153382		
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	endorsed		R2-153890	Running stage 2 CR TS 36.300 to capture agreement on eD2D	Qualcomm Incorporated	draftCR	36.300	13.0.0			B	result of two week email discussion [91#16][LTE/eD2D]	Rel-13	LTE_eD2D_Prox-Core	R2-153734		
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	revised		R2-153891	Introduction of the Multiflow 3F-4C configuration	Nokia Networks	CR	25.331	12.6.0	5776	1	B		Rel-13	HSDPA_MFTX_enh-Core	R2-153076, R2-153901		UMTS
		No			R2-153055	Void													UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	revised		R2-153893	LS to RAN3 on optimization of Idle to connected mode transition	Nokia Networks	LS out						to RAN3 from RAN2	Rel-13	UTRA_EDL_L23-Core	R2-153116, R2-153895		UMTS
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	revised		R2-153894	Introduction of the Multiflow 3F-4C configuration	Nokia Networks	CR	25.302	12.1.0	0237	1	B		Rel-13	HSDPA_MFTX_enh-Core	R2-153074, R2-153900		UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	agreed		R2-153895	LS to RAN3 LS on Idle to connected mode transition optimization (to: RAN3; cc: -; contact: Nokia Networks)	RAN2	LS out							Rel-13	UTRA_EDL_L23-Core	R2-153893	outgoing LS was sent on 26.08.2015	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	revised		R2-153896	LS on eDRX measurements in Idle mode for UMTS	Ericsson	LS out							Rel-13	UTRA_SDATA_POWSAV-Core	R2-153542, R2-153902		UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	revised		R2-153897	LS on enabling return into PSM for UMTS	Ericsson	LS out							Rel-13	UTRA_SDATA_POWSAV-Core	R2-153547, R2-153903		UMTS
10.6	UTRA Rel-12: WI: Increasing the minimum number of carriers for UE monitoring in UTRA and E-UTRA	Yes	agreed		R2-153898	Increased UE carrier monitoring E-UTRA support mandatory	Ericsson	CR	25.306	12.5.0	0488	1	F		Rel-12	LTE_UTRA_IncMon-Core	R2-153532, R2-153891	moved from 4.2 to 10.6	UMTS
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	revised		R2-153899	Draft Reply LS on EVSoCS	Qualcomm Incorporated	LS out							Rel-13	EVSoCS_UTRAN	R2-153894, R2-153904	noted at Joint RAN1 and RAN2 EVS session	UMTS
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	agreed		R2-153900	Introduction of the Multiflow 3F-4C configuration	Nokia Networks	CR	25.302	12.1.0	0237	2	B		Rel-13	HSDPA_MFTX_enh-Core	R2-153074, R2-153894		UMTS
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	agreed		R2-153901	Introduction of the Multiflow 3F-4C configuration	Nokia Networks	CR	25.331	12.6.0	5776	2	B		Rel-13	HSDPA_MFTX_enh-Core	R2-153891		UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	agreed		R2-153902	LS on eDRX measurements in Idle mode for UMTS (to: RAN4; cc: -; contact: Ericsson)	RAN2	LS out							Rel-13	UTRA_SDATA_POWSAV-Core	R2-153542, R2-153896		UMTS
11.02.3	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	agreed		R2-153903	LS on enabling return into PSM for UMTS (to: RAN3; cc: -; contact: Ericsson)	RAN2	LS out							Rel-13	UTRA_SDATA_POWSAV-Core	R2-153897		UMTS
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	agreed		R2-153904	Reply LS on EVSoCS (to: SA4; cc: RAN1, RAN3; contact: Qualcomm)	RAN2	LS out						reply to R2-153037 = S4-150870	Rel-13	EVSoCS_UTRAN-Core	R2-153894, R2-153899		UMTS
10.6	UTRA Rel-12: WI: Increasing the minimum number of carriers for UE monitoring in UTRA and E-UTRA	Yes	agreed		R2-153905	Clarification for the inter-frequency measurement results on RACH with extended cell ID values	Nokia Networks, Huawei, HiSilicon	CR	25.331	12.6.0	5780	1	F	result of one week email discussion [91#00][UMTS/IncMon]	Rel-12	LTE_UTRA_IncMon-Core	R2-153306		UMTS
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-153906	Minutes of Joint RAN1 and RAN2 EVS session	Ericsson	Discussion							Rel-13	EVSoCS_UTRAN-Core		noted at Joint RAN1 and RAN2 EVS session	UMTS
07.01.1	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Organizational	No	withdrawn		R2-153907	CR to capture LAA agreements	Huawei, HiSilicon	CR	36.300	13.0.0	0787	1	B	result of two week email discussion [91#10][LTE/LAA]	Rel-13	LTE_LAA-Core	R2-153323		
		No			R2-153055	Void													
13.1.1	LTE breakout session; Report from the User Plane session	Yes	revised		R2-153909	Draft reply LS on paging co-ordination for extended idle mode DRX (to: SA2, RAN3; cc: -; contact: Qualcomm)	Qualcomm	LS out						to: SA2, RAN3; cc: -; reply to S2-152697 (R2-153032)	Rel-13	LTE_extDRX-Core	R2-153888, R2-153914		
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	agreed		R2-153910	TR 36.881 v0.2.1 for study on latency reduction techniques for LTE	Ericsson (Rapporteur)	TR	36.881	0.2.1				result of two weeks email discussion [91#17][LTE/Latency]	Rel-13	FS_LTE_LATRED	R2-153984		
07.12	LTE Rel-13: Other LTE Rel-13 WIs	Yes	agreed		R2-153911	reply LS on RAN Sharing Enhancements for LTE (to: RAN3, SA5; cc: SA1; contact: Nokia Networks)	RAN2	LS out						reply to R2-153016 = R3-151316	Rel-13	RSE-RAN_LTE-Core	R2-153868		
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	endorsed		R2-153912	Paging optimization	Huawei, HiSilicon	CR	36.331	12.6.0	1873	2	B	will not submitted to TSG	Rel-13	TEI13	R2-153870		
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	revised		R2-153913	Response LS on Paging Optimization considering supported frequency bands (to: RAN3, SA2; cc: -; contact: Huawei)	RAN2	LS out						reply LS to R2-152010 = R3-150889; an attachment missed	Rel-13	TEI13	R2-153871, R2-153973		
13.1.1	LTE breakout session; Report from the User Plane session	Yes	agreed		R2-153914	Reply LS on paging co-ordination for extended idle mode DRX (to: SA2, RAN3; cc: -; contact: Qualcomm)	RAN2	LS out						reply to R2-153032 = S2-152697	Rel-13	LTE_extDRX-Core	R2-153909		
07.10.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	agreed		R2-153915	LS on extended DRX (to: RAN4; cc: -; contact: Media Tek)	RAN2	LS out							Rel-13	LTE_extDRX-Core	R2-153882		

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment
03.1	LSin: Joint UMTS/LTE relevance	Yes	agreed		R2-153916	LS on bitrate variations and handling in RAN (to: SA4; cc: -; contact: Ericsson)	RAN2	LS out						reply to R2-153036 = S4-150866	Rel-13	QOSE2EMTSI	R2-153854	
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	agreed		R2-153917	Clarification on cell selection sequence upon leaving RRC_CONNECTED	HTC Corporation	CR	36.331	12.6.0	1880	2	F	result of one week email discussion [91#01][LTE/WiFi]	Rel-12	UTRA_LTE_WLAN_interw-Core	R2-153856	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153918	CR for IDC signalling enhancement for UL CA	Ericsson, Nokia Networks, NTT DOCOMO, INC., Samsung	CR	36.306	11.11.0	0297		C	result of one week email discussion [91#04][LTE/IDC]	Rel-11	SPIA_IDC_LTE-Core	R2-153872	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153919	CR for IDC signalling enhancement for UL CA	Ericsson, Nokia Networks, NTT DOCOMO, INC., Samsung	CR	36.306	12.5.0	0298		A	result of one week email discussion [91#04][LTE/IDC]	Rel-12	SPIA_IDC_LTE-Core	R2-153872	
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	agreed		R2-153920	TP for TR37.857 for TBS Protocol Impacts	NextNav	pCR	37.857						Rel-13	FS_UTRA_LTE_iPos_enh	R2-153762	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153921	Draft LS on decisions regarding rank3/4 in TM3 and TM4 for additional UE categories (to: RAN1; cc: RAN, RAN4; contact: Nokia Networks)	Nokia Networks	LS out							Rel-10	TEI10	R2-153931	
05.2	Joint UMTS/LTE: Rel-13: SI: Study on Indoor Positioning Enhancements for UTRA and LTE	Yes	agreed		R2-153922	Text proposals for IMU sensor for indoor positioning	Sony	pCR	37.857						Rel-13	FS_UTRA_LTE_iPos_enh	R2-153123	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153923	Correction to additionalSpectrumEmission - Option 1	HTC Corporation	CR	36.331	10.17.0	1896	1	F		Rel-10	LTE_CA-Core	R2-153686	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153924	Correction to additionalSpectrumEmission - Option 1	HTC Corporation	CR	36.331	11.12.0	1907		A		Rel-11	LTE_CA-Core		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153925	Correction to additionalSpectrumEmission - Option 1	HTC Corporation	CR	36.331	12.6.0	1908		A		Rel-12	LTE_CA-Core		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153926	Minor corrections on SON measurements	Alcatel-Lucent	CR	36.331	12.6.0	1909		F		Rel-12	TEI12	R2-153310, R2-153960	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153927	Draft LS on ANR in case of MFBI (to: RAN3; cc: -; contact: Huawei)	Huawei	LS out						to: RAN3; cc: -	Rel-8	TEI8	R2-153794, R2-153959	
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: User Plane Architecture and Functionality	Yes	not treated		R2-153928	Considerations on the adoption of adaption layer in the user plane for LTE-WLAN aggregation	China Telecommunications	discussion						revision of R2-153344	Rel-13	LTE_WLAN_radio-Core	R2-153344	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153929	Correction on the reference of EPDCCH	Huawei, HiSilicon, China Telecom	CR	36.331	11.12.0	1878	1	F		Rel-11	LTE_enh_dl_ctrl-Core	R2-153477	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153930	Correction on the reference of EPDCCH	Huawei, HiSilicon, China Telecom	CR	36.331	12.6.0	1879	1	A		Rel-12	LTE_enh_dl_ctrl-Core	R2-153478	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153931	LS on decisions regarding rank3/4 in TM3 and TM4 for additional UE categories (to: RAN1; cc: RAN, RAN4; contact: Nokia Networks)	RAN2	LS out							Rel-10	TEI10	R2-153921	outgoing LS was sent on 26.08.2015.
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	No	withdrawn		R2-153932	Correction to SCG reconfiguration	QUALCOMM India	CR	36.331	12.6.0	1902	1	F		Rel-12	LTE_SC_enh_dualC-Core	R2-153730	
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-153933	Introducing general handling and guidelines concerning critical extensions within a release	Samsung	CR	36.331	12.6.0	1891	1	F		Rel-12	TEI12, LTE_D2D_Prox-Core	R2-153634	
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-153934	Sidelink terminology alignment in TS 36.300	Intel Corporation, Qualcomm Incorporated, LG Electronics Inc.	CR	36.300	12.6.0	0786	1	F		Rel-12	LTE_D2D_Prox-Core	R2-153270	
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-153935	Sidelink terminology alignment in TS 36.304	Intel Corporation, Qualcomm Incorporated, LG Electronics Inc.	CR	36.304	12.5.0	0273	1	F		Rel-12	LTE_D2D_Prox-Core	R2-153271	
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-153936	Corrections on UE sidelink capabilities in TS 36.306	Huawei, HiSilicon	CR	36.306	12.5.0	0289	1	F		Rel-12	LTE_D2D_Prox-Core	R2-153229	
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	revised		R2-153937	Clarification for NAICS capability signalling	Nokia Networks	CR	36.331	12.6.0	1906	1	F		Rel-12	LTE_NAICS-Core	R2-153833, R2-153962	
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	postponed		R2-153938	highPriorityAccess for MMTEL voice, MMTEL video and SMS	MediaTek Inc.	CR	36.331	12.6.0	1860	1	F		Rel-12	SCM_LTE-Core	R2-153249	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	revised		R2-153939	Draft Response LS on Paging for MTC (to: RAN3; cc: CT1, SA2, RAN1; contact: Alcatel-Lucent)	Alcatel Lucent	LS out							Rel-13	LTE_MTCe2_L1	R2-153015, R2-153966	
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	revised		R2-153940	Draft Reply LS on C-IoT/MTC data transmission targets for security-related procedures (to: SA3; cc: GERAN1, GERAN2, RAN1; contact: Vodafone)	Vodafone GmbH	LS out						reply to S3-151418	Rel-13		R2-153524, R2-153969	
07.06.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Organizational	Yes	revised		R2-153941	Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement	Intel Corporation, China Telecom, Qualcomm Incorporated	CR	36.300	13.0.0	0791	1	B	will not submitted to TSG	Rel-13	LTE_WLAN_radio-Core	R2-153763	CR & rev number missed in the CR coversheet
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153942	Additional MIMO/CSI capability for intra-band contguous CA	Intel Corporation, NTT DOCOMO	CR	36.331	12.6.0	1861	1	F	one week email discussion [91#02][LTE/CA] planned	Rel-12	LTE_CA-Core, TEI12	R2-153266, R2-153974	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153943	Additional MIMO/CSI capability for intra-band contguous CA	Intel Corporation, NTT DOCOMO	CR	36.306	12.5.0	0290	1	F	one week email discussion [91#02][LTE/CA] planned	Rel-12	LTE_CA-Core, TEI12	R2-153267, R2-153975	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153944	[Draft] LS on intra-band contiguous CA and intra-band non-contiguous CA	Intel Corporation	LS out						to: RAN1; cc: -	Rel-12	LTE_CA-Core, TEI12	R2-153948	
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	revised		R2-153945	36.300 running CR to capture agreements on CA Enhancement Beyond 5 Carriers	Nokia Networks	draftCR	36.300	13.0.0			B		Rel-13	LTE_CA_enh_b5C-Core	R2-153963	
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	endorsed		R2-153946	36331 CR for capturing B5C and SCell on PUCCH	Nokia Networks	CR	36.331	12.6.0	1872	1	B	result of two week email discussion [91#12][LTE/CAe]; will not submitted to TSG	Rel-13	LTE_CA_enh_b5C-Core	R2-153459	
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	revised		R2-153947	Running MAC CR for Carrier Aggregation enhancements	Ericsson	CR	36.321	12.6.0	0793	1	B		Rel-13	LTE_CA_enh_b5C-Core	R2-153653, R2-153964	

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153948	LS on intra-band contiguous CA and intra-band non-contiguous CA (to: RAN1; cc: -; contact: Intel)	RAN2	LS out							Rel-12	LTE_CA-Core, TEI12	R2-153944	outgoing LS was sent on 26.08.2015
07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	revised		R2-153949	Draft LS to RAN1 on SC-PTM transmission (to: RAN1; cc: -; contact: Huawei)	Huawei	LS out							Rel-13	LTE_SC_PTM-Core	R2-153381, R2-153965	
15	Any other business	Yes	not treated		R2-153950	Reuse of LTE L2/L3 layers for Cellular IoT	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Ericsson LM, Mediatek Inc., Panasonic, Sierra Wireless SA, ZTE Corporation, Nokia Networks, Marvell, Intel Corporation, Sequans, Gemalto, Sprint Corporation, Samsung Electronics Co. Ltd, Telstra	discussion											
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153951	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated Huawei, HiSilicon	CR	36.331	10.17.0	1885	1	F	one week email discussion [91#03][LTE/CA] planned	Rel-10	TEI10	R2-153608, R2-153976	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153952	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks, [Ericsson], [Huawei], [HiSilicon], [NTT DOCOMO], [Intel]	CR	36.331	11.12.0	1886	1	A	one week email discussion [91#03][LTE/CA] planned	Rel-11	TEI10	R2-153609, R2-153977	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153953	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Huawei, HiSilicon, Samsung, [NTT DOCOMO], [Intel]	CR	36.331	12.6.0	1887	1	A	one week email discussion [91#03][LTE/CA] planned	Rel-12	TEI10	R2-153610, R2-153978	CR cat. should be checked
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153954	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.306	10.13.0	0294	1	C	one week email discussion [91#03][LTE/CA] planned	Rel-10	TEI10	R2-153611, R2-153979	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153955	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks	CR	36.306	11.11.0	0295	1	A	one week email discussion [91#03][LTE/CA] planned	Rel-11	TEI10	R2-153612, R2-153980	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-153956	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung	CR	36.306	12.5.0	0296	1	A	one week email discussion [91#03][LTE/CA] planned	Rel-12	TEI10	R2-153613, R2-153981	CR cat. should be checked
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	revised		R2-153957	TR 36.880 Study on further enhancements of Minimization of Drive Tests (MDT) for E-UTRAN	rapporteur (CMCC)	TR	36.880	0.3.1					Rel-13	FS_LTE_eMDT2	R2-153971	
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	revised		R2-153958	Sidelink terminology alignment in TS 36.331	Intel Corporation, Qualcomm Incorporated, LG Electronics Inc.	CR	36.331	12.6.0	1912		F		Rel-12	LTE_D2D_Prox-Core	R2-153961	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153959	LS on ANR in case of MFBI (to: RAN3; cc: -; contact: Huawei)	RAN2	LS out							Rel-8	TEI8	R2-153927	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153960	Applicability of longCodeState1XRTT for 1xRTT IRAT ANR	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	CR	36.331	12.6.0	1909	1	F		Rel-12	TEI12	R2-153926	
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-153961	Sidelink terminology alignment in TS 36.331	Intel Corporation, Qualcomm Incorporated, LG Electronics Inc.	CR	36.331	12.6.0	1912	1	F	result of one week email discussion [91#05][LTE/ProSe]	Rel-12	LTE_D2D_Prox-Core	R2-153958	
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	agreed		R2-153962	Clarification for NAICS capability signalling	Nokia Networks	CR	36.331	12.6.0	1906	2	F		Rel-12	LTE_NAICS-Core	R2-153937	
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	endorsed		R2-153963	36.300 running CR to capture agreements on CA Enhancement Beyond 5 Carriers	Nokia Networks	draftCR	36.300	13.0.0			B	will not submitted to TSG	Rel-13	LTE_CA_enh_b5C-Core	R2-153945	
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	endorsed		R2-153964	Running MAC CR for Carrier Aggregation enhancements	Ericsson	CR	36.321	12.6.0	0793	2	B	result of two week email discussion [91#11][LTE/CAe]; will not submitted to TSG	Rel-13	LTE_CA_enh_b5C-Core	R2-153947	
07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	agreed		R2-153965	LS to RAN1 on SC-PTM transmission (to: RAN1; cc: -; contact: Huawei)	RAN2	LS out							Rel-13	LTE_SC_PTM-Core	R2-153949	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	agreed		R2-153966	Response LS on Paging for MTC (to: RAN3; cc: CT1, SA2, RAN1; contact: Alcatel-Lucent)	RAN2	LS out						reply to R2-153015 = R3-151311	Rel-13	LTE_MTCe2_L1-Core	R2-153939	
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	endorsed		R2-153967	Running 36.300 CR for Rel-13 low complexity and coverage enhanced UEs	Ericsson	draftCR	36.300	13.0.0			B	result of two weeks email discussion [91#14][LTE/MTC]	Rel-13	LTE_MTCe2_L1-Core		
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	agreed		R2-153968	LS on system information broadcast, random access, and paging for Rel-13 LC/CE UEs (to: RAN1; cc: -; contact: Ericsson)	RAN2	LS out						result of two weeks email discussion [91#14][LTE/MTC]	Rel-13	LTE_MTCe2_L1-Core		

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Other	Yes	agreed		R2-153969	Reply LS on C-IoT/MTC data transmission targets for security-related procedures (to: SA3; cc: GERAN1, GERAN2, RAN1; contact: Vodafone)	RAN2	LS out						reply to R2-152017 = S3-151418	Rel-13		R2-153940	
07.06.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Organizational	Yes	revised		R2-153970	Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement	Intel Corporation, China Telecom, Qualcomm Incorporated	CR	36.300	13.0.0	0791	2	B	will not submitted to TSG	Rel-13	LTE_WLAN_radio-Core	R2-153941, R2-153972	
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	agreed		R2-153971	TR 36.880 Study on further enhancements of Minimization of Drive Tests (MDT) for E-UTRAN	rapporteur (CMCC)	TR	36.880	0.3.2				result of one week email discussion [91#06][LTE/MDT]	Rel-13	FS_LTE_eMDT2	R2-153957	
07.06.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Organizational	Yes	endorsed		R2-153972	Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement	Intel Corporation, China Telecom, Qualcomm Incorporated	CR	36.300	13.0.0	0791	3	B	result of two week email discussion [91#15][LTE/WiFi]; will not submitted to TSG	Rel-13	LTE_WLAN_radio-Core	R2-153970	
07.13	LTE Rel-13: LTE TEI13 enhancements	Yes	agreed		R2-153973	Response LS on Paging Optimization considering supported frequency bands (to: RAN3, SA2; cc: -; contact: Huawei)	RAN2	LS out						reply LS to R2-152010 = R3-150889	Rel-13	TEI13	R2-153913	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153974	Additional MIMO/CSI capability for intra-band contiguous CA	Intel Corporation, NTT DOCOMO, Samsung	CR	36.331	12.6.0	1861	2	C	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-12	LTE_CA-Core, TEI12	R2-153942	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153975	Additional MIMO/CSI capability for intra-band contiguous CA	Intel Corporation, NTT DOCOMO, Samsung	CR	36.306	12.5.0	0290	2	C	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-12	LTE_CA-Core, TEI12	R2-153943	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153976	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	CR	36.331	10.17.0	1885	2	C	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-10	LTE-L23, TEI10	R2-153951	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153977	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	CR	36.331	11.12.0	1886	2	A	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-11	LTE-L23, TEI10	R2-153952	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153978	Signalling for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	CR	36.331	12.6.0	1887	2	C	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-12	LTE-L23, TEI10	R2-153953	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153979	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	CR	36.306	10.13.0	0294	2	C	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-10	LTE-L23, TEI10	R2-153954	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153980	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	CR	36.306	11.11.0	0295	2	A	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-11	LTE-L23, TEI10	R2-153955	cover sheet wrongly shows rev 1
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-153981	Capability for 4-layer MIMO with TM3 and TM4	Nokia Networks, Ericsson, Qualcomm Incorporated, Huawei, HiSilicon, Samsung, Deutsche Telekom	CR	36.306	12.5.0	0296	2	C	result of one week email discussion [91#02][LTE/CA]; will be provided by RAN1 with their linked CRs	Rel-12	LTE-L23, TEI10	R2-153956	cover sheet wrongly shows rev 1
07.08	LTE Rel-13: SI: Further MDT enhancements	Yes	agreed		R2-153982	TR 36.880 Study on further enhancements of Minimization of Drive Tests (MDT) for E-UTRAN	rapporteur (CMCC)	TR	36.880	0.4.0				result of one week email discussion [91#06][LTE/MDT]; v0.4.0 will be provided as v1.0.0 for approval to the RAN plenary	Rel-13	FS_LTE_eMDT2	R2-153971	
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	agreed		R2-153983	LS on gap handling for sidelink discovery (to: RAN4; cc: -; contact: Qualcomm)	RAN2	LS out						result of one week email discussion [91#07][LTE/eD2D]	Rel-13	LTE_eD2D_Prox-Core		
07.11	LTE Rel-13: SI: Study on Latency reduction techniques for LTE	Yes	agreed		R2-153984	TR 36.881 v0.3.0 for study on latency reduction techniques for LTE	Ericsson (Rapporteur)	TR	36.881	0.3.0				result of two weeks email discussion [91#17][LTE/Latency]	Rel-13	FS_LTE_LATRED	R2-153910	
07.01.1	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Organizational	Yes	endorsed		R2-153985	CR to capture LAA agreements	Huawei, HiSilicon	CR	36.300	13.0.0	0787	2	B	result of two week email discussion [91#10][LTE/LAA]	Rel-13	LTE_LAA-Core	R2-153323	

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Appendix 23

www.3gpp.org / ftp / tsg_ran / WG2_RL2 / TSGR2_91 / Docs

sort by name/desc	sort by date/desc	sort by size/desc
R2-153001.zip	2015/08/05 9:57	303,3 KB
R2-153002.zip	2015/08/13 15:12	1060,4 KB
R2-153003.zip	2015/08/23 5:28	411,3 KB
R2-153004.zip	2015/08/05 9:57	10,4 KB
R2-153005.zip	2015/08/05 9:57	9,6 KB
R2-153006.zip	2015/08/05 9:57	44 KB
R2-153007.zip	2015/08/05 9:57	14,8 KB
R2-153008.zip	2015/08/05 9:57	9,2 KB
R2-153009.zip	2015/08/05 9:57	15,8 KB
R2-153010.zip	2015/08/05 9:57	16,1 KB
R2-153011.zip	2015/08/05 9:57	17,9 KB
R2-153012.zip	2015/08/05 9:57	17,2 KB
R2-153013.zip	2015/08/05 9:57	9,2 KB
R2-153014.zip	2015/08/05 9:57	22,9 KB
R2-153015.zip	2015/08/05 9:57	13,8 KB
R2-153016.zip	2015/08/05 9:57	35 KB
R2-153017.zip	2015/08/05 9:57	10,2 KB
R2-153018.zip	2015/08/05 9:57	14,4 KB
R2-153019.zip	2015/08/05 9:57	16,5 KB
R2-153020.zip	2015/08/05 9:57	23,8 KB
R2-153021.zip	2015/08/05 9:57	14,8 KB
R2-153022.zip	2015/08/05 9:57	54,5 KB
R2-153023.zip	2015/08/05 9:57	20,2 KB
R2-153024.zip	2015/08/05 9:57	11,6 KB
R2-153025.zip	2015/08/05 9:57	11,2 KB
R2-153026.zip	2015/08/05 9:57	14,5 KB
R2-153027.zip	2015/08/05 9:57	10,2 KB
R2-153028.zip	2015/08/05 9:57	48,5 KB
R2-153029.zip	2015/08/05 9:57	10,4 KB
R2-153030.zip	2015/08/05 9:57	14,5 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153031.zip	2015/08/05 9:57	72 KB
R2-153032.zip	2015/08/05 9:57	257,9 KB
R2-153033.zip	2015/08/05 9:57	9,4 KB
R2-153034.zip	2015/08/05 9:57	21,7 KB
R2-153035.zip	2015/08/05 9:57	11,1 KB
R2-153036.zip	2015/08/05 9:57	627,5 KB
R2-153037.zip	2015/08/05 9:57	16,5 KB
R2-153038.zip	2015/08/05 9:57	57,8 KB
R2-153039.zip	2015/08/23 2:47	10,3 KB
R2-153040.zip	2015/08/23 2:47	12,2 KB
R2-153041.zip	2015/08/23 2:47	10,8 KB
R2-153042.zip	2015/08/23 2:47	9,9 KB
R2-153043.zip	2015/08/28 6:56	13 KB
R2-153044.zip	2015/08/28 6:56	30 KB
R2-153045.zip	2015/08/28 6:56	66,5 KB
R2-153046.zip	2015/08/28 6:56	11,1 KB
R2-153047.zip	2015/08/28 6:56	10,4 KB
R2-153048.zip	2015/08/28 6:56	9,9 KB
R2-153049.zip	2015/08/28 6:56	42,5 KB
R2-153050.zip	2015/08/28 6:56	17,5 KB
R2-153051.zip	2015/08/28 6:56	102,6 KB
R2-153052.zip	2015/08/28 6:56	17,5 KB
R2-153053.zip	2015/08/28 6:56	15,2 KB
R2-153054.zip	2015/08/28 6:57	216,2 KB
R2-153058.zip	2015/08/13 16:52	3056,1 KB
R2-153059.zip	2015/08/28 6:57	1060,2 KB
R2-153060.zip	2015/08/28 9:24	592,9 KB
R2-153064.zip	2015/08/09 15:21	17,3 KB
R2-153065.zip	2015/08/09 15:22	17,3 KB
R2-153066.zip	2015/08/09 15:23	17,3 KB
R2-153067.zip	2015/08/06 12:56	4207,3 KB
R2-153068.zip	2015/08/14 8:49	22,3 KB
R2-153069.zip	2015/08/14 22:33	133,1 KB
R2-153070.zip	2015/08/15 2:31	37,9 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153071.zip	2015/08/15 2:31	40,1 KB
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R2-153073.zip	2015/08/14 18:20	431,1 KB
R2-153074.zip	2015/08/14 18:04	23,9 KB
R2-153075.zip	2015/08/14 18:05	51,1 KB
R2-153076.zip	2015/08/14 18:05	39,2 KB
R2-153077.zip	2015/08/14 18:24	9,1 KB
R2-153078.zip	2015/08/17 6:48	810,8 KB
R2-153079.zip	2015/08/17 6:48	268,9 KB
R2-153080.zip	2015/08/17 6:48	57,3 KB
R2-153081.zip	2015/08/17 6:48	151 KB
R2-153082.zip	2015/08/17 6:48	21,9 KB
R2-153083.zip	2015/08/14 7:13	38,5 KB
R2-153084.zip	2015/08/14 18:36	19,2 KB
R2-153085.zip	2015/08/14 7:17	37,3 KB
R2-153088.zip	2015/08/14 7:40	17,8 KB
R2-153089.zip	2015/08/14 7:40	12,5 KB
R2-153090.zip	2015/08/14 7:40	13,3 KB
R2-153091.zip	2015/08/13 7:39	27 KB
R2-153092.zip	2015/08/13 7:39	26,5 KB
R2-153093.zip	2015/08/13 7:39	138,1 KB
R2-153094.zip	2015/08/13 7:41	22 KB
R2-153095.zip	2015/08/13 7:39	23,7 KB
R2-153096.zip	2015/08/13 7:39	805,2 KB
R2-153097.zip	2015/08/15 1:35	386,9 KB
R2-153098.zip	2015/08/13 7:21	24,4 KB
R2-153099.zip	2015/08/13 7:21	27,5 KB
R2-153100.zip	2015/08/13 7:21	23,9 KB
R2-153101.zip	2015/08/13 7:23	25,5 KB
R2-153102.zip	2015/08/15 2:21	39,2 KB
R2-153103.zip	2015/08/14 14:55	79,2 KB
R2-153104.zip	2015/08/14 8:53	258 KB
R2-153105.zip	2015/08/14 8:53	51,6 KB
R2-153106.zip	2015/08/14 8:53	26,1 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153107.zip	2015/08/14 8:57	1678,5 KB
R2-153108.zip	2015/08/14 8:54	111,8 KB
R2-153109.zip	2015/08/14 6:41	142 KB
R2-153110.zip	2015/08/14 6:41	436,6 KB
R2-153111.zip	2015/08/14 6:05	247,8 KB
R2-153112.zip	2015/08/13 6:35	16,2 KB
R2-153113.zip	2015/08/14 6:41	148,1 KB
R2-153114.zip	2015/08/14 6:41	141,8 KB
R2-153115.zip	2015/08/15 1:13	20,1 KB
R2-153116.zip	2015/08/14 18:56	282,1 KB
R2-153117.zip	2015/08/14 18:57	163,5 KB
R2-153118.zip	2015/08/14 18:57	277 KB
R2-153119.zip	2015/08/15 2:24	45,1 KB
R2-153121.zip	2015/08/15 5:55	110,7 KB
R2-153122.zip	2015/08/15 5:55	28,5 KB
R2-153123.zip	2015/08/14 14:32	36,3 KB
R2-153124.zip	2015/08/14 14:32	46,4 KB
R2-153125.zip	2015/08/14 13:48	345,6 KB
R2-153126.zip	2015/08/14 13:48	38,8 KB
R2-153127.zip	2015/08/14 13:48	26,1 KB
R2-153128.zip	2015/08/14 13:48	118,6 KB
R2-153129.zip	2015/08/14 13:48	34,1 KB
R2-153130.zip	2015/08/14 7:27	212,7 KB
R2-153132.zip	2015/08/14 11:27	21,6 KB
R2-153133.zip	2015/08/14 14:48	21,3 KB
R2-153134.zip	2015/08/17 11:48	99,7 KB
R2-153135.zip	2015/08/14 14:48	51,2 KB
R2-153136.zip	2015/08/14 14:48	16,2 KB
R2-153137.zip	2015/08/14 14:48	24,6 KB
R2-153138.zip	2015/08/14 14:48	17 KB
R2-153139.zip	2015/08/14 14:48	104,2 KB
R2-153140.zip	2015/08/14 14:48	79,2 KB
R2-153141.zip	2015/08/14 14:48	20,2 KB
R2-153142.zip	2015/08/13 18:06	236,8 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-153145.zip	2015/08/14 16:01	16 KB
R2-153146.zip	2015/08/14 16:01	17,4 KB
R2-153147.zip	2015/08/15 7:27	19,3 KB
R2-153148.zip	2015/08/14 11:34	31,7 KB
R2-153149.zip	2015/08/14 11:34	70,2 KB
R2-153150.zip	2015/08/17 0:53	124,3 KB
R2-153151.zip	2015/08/14 12:28	257 KB
R2-153152.zip	2015/08/14 15:49	58,6 KB
R2-153153.zip	2015/08/15 2:25	1373,6 KB
R2-153154.zip	2015/08/14 15:49	33,1 KB
R2-153155.zip	2015/08/13 2:55	40,6 KB
R2-153156.zip	2015/08/14 7:37	21,9 KB
R2-153157.zip	2015/08/13 2:55	27,2 KB
R2-153158.zip	2015/08/14 7:48	22,2 KB
R2-153159.zip	2015/08/14 15:50	33,1 KB
R2-153160.zip	2015/08/13 2:55	27,9 KB
R2-153161.zip	2015/08/14 15:50	143,8 KB
R2-153162.zip	2015/08/13 2:55	51 KB
R2-153163.zip	2015/08/14 15:50	39,2 KB
R2-153164.zip	2015/08/14 11:35	121,9 KB
R2-153165.zip	2015/08/14 11:35	55,3 KB
R2-153166.zip	2015/08/14 11:35	80,4 KB
R2-153167.zip	2015/08/13 8:32	24,3 KB
R2-153168.zip	2015/08/13 8:32	95,7 KB
R2-153169.zip	2015/08/13 8:32	21,3 KB
R2-153170.zip	2015/08/13 8:32	68,6 KB
R2-153171.zip	2015/08/13 8:32	24,7 KB
R2-153172.zip	2015/08/14 9:18	27,8 KB
R2-153173.zip	2015/08/14 9:18	27,4 KB
R2-153174.zip	2015/08/14 9:18	10,4 KB
R2-153175.zip	2015/08/14 13:53	25,7 KB
R2-153176.zip	2015/08/18 7:27	75,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153177.zip	2015/08/18 7:27	45 KB
R2-153179.zip	2015/08/14 14:12	32,4 KB
R2-153180.zip	2015/08/14 14:12	37,7 KB
R2-153182.zip	2015/08/15 1:39	107,5 KB
R2-153183.zip	2015/08/15 1:39	30,3 KB
R2-153184.zip	2015/08/15 1:39	133,2 KB
R2-153185.zip	2015/08/14 14:48	270,4 KB
R2-153186.zip	2015/08/14 14:12	17,5 KB
R2-153187.zip	2015/08/14 6:26	63,1 KB
R2-153188.zip	2015/08/14 16:01	27,2 KB
R2-153189.zip	2015/08/14 16:01	18,1 KB
R2-153190.zip	2015/08/14 14:12	39,8 KB
R2-153191.zip	2015/08/13 6:51	341,7 KB
R2-153192.zip	2015/08/14 14:12	35,5 KB
R2-153193.zip	2015/08/14 14:12	41,7 KB
R2-153194.zip	2015/08/14 14:12	80,6 KB
R2-153195.zip	2015/08/14 14:12	40,1 KB
R2-153196.zip	2015/08/13 6:43	18 KB
R2-153197.zip	2015/08/14 14:11	17,6 KB
R2-153198.zip	2015/08/14 14:11	20,3 KB
R2-153199.zip	2015/08/14 14:11	18,3 KB
R2-153201.zip	2015/08/14 14:11	113,8 KB
R2-153202.zip	2015/08/14 14:11	41,1 KB
R2-153203.zip	2015/08/14 14:11	17,3 KB
R2-153204.zip	2015/08/14 14:10	38,6 KB
R2-153205.zip	2015/08/14 14:10	62,2 KB
R2-153206.zip	2015/08/14 14:10	26 KB
R2-153207.zip	2015/08/14 14:10	42,1 KB
R2-153208.zip	2015/08/14 14:10	37,1 KB
R2-153209.zip	2015/08/13 7:28	243,5 KB
R2-153210.zip	2015/08/14 14:49	31,6 KB
R2-153211.zip	2015/08/14 14:49	19,7 KB
R2-153212.zip	2015/08/13 7:28	222,7 KB
R2-153213.zip	2015/08/14 14:52	17,4 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153214.zip	2015/08/13 12:26	105 KB
R2-153215.zip	2015/08/14 14:49	19,4 KB
R2-153216.zip	2015/08/13 9:38	181 KB
R2-153217.zip	2015/08/13 9:39	425,2 KB
R2-153218.zip	2015/08/14 14:49	19,5 KB
R2-153219.zip	2015/08/14 14:49	19,5 KB
R2-153220.zip	2015/08/15 1:39	33,6 KB
R2-153222.zip	2015/08/14 15:09	19,4 KB
R2-153223.zip	2015/08/14 15:09	724,2 KB
R2-153224.zip	2015/08/14 15:09	22,2 KB
R2-153226.zip	2015/08/14 15:09	63,9 KB
R2-153227.zip	2015/08/15 5:30	45,8 KB
R2-153228.zip	2015/08/14 15:09	11 KB
R2-153229.zip	2015/08/15 5:30	26,2 KB
R2-153230.zip	2015/08/15 5:30	58,6 KB
R2-153231.zip	2015/08/15 5:30	234,1 KB
R2-153233.zip	2015/08/15 5:30	53,1 KB
R2-153234.zip	2015/08/15 5:31	23 KB
R2-153235.zip	2015/08/15 5:39	233,5 KB
R2-153236.zip	2015/08/15 5:39	111,3 KB
R2-153237.zip	2015/08/14 7:09	191,2 KB
R2-153238.zip	2015/08/15 5:39	80,1 KB
R2-153239.zip	2015/08/15 5:39	99,8 KB
R2-153240.zip	2015/08/14 14:53	109,3 KB
R2-153241.zip	2015/08/15 5:39	62,8 KB
R2-153242.zip	2015/08/15 5:40	136,1 KB
R2-153243.zip	2015/08/14 7:09	77,1 KB
R2-153244.zip	2015/08/13 12:14	83,2 KB
R2-153245.zip	2015/08/13 12:25	79,7 KB
R2-153246.zip	2015/08/13 12:25	69,4 KB
R2-153247.zip	2015/08/13 12:25	68,8 KB
R2-153248.zip	2015/08/14 7:09	115 KB
R2-153249.zip	2015/08/14 7:09	18,3 KB
R2-153250.zip	2015/08/13 12:40	63 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153251.zip	2015/08/14 19:39	18,1 KB
R2-153252.zip	2015/08/14 9:21	165,9 KB
R2-153253.zip	2015/08/14 11:44	107,3 KB
R2-153254.zip	2015/08/14 9:21	153,5 KB
R2-153255.zip	2015/08/14 23:20	34 KB
R2-153256.zip	2015/08/14 12:34	31 KB
R2-153257.zip	2015/08/14 12:36	75,9 KB
R2-153258.zip	2015/08/14 12:36	33 KB
R2-153259.zip	2015/08/14 12:36	34,4 KB
R2-153260.zip	2015/08/14 12:36	33,2 KB
R2-153261.zip	2015/08/14 12:37	17,7 KB
R2-153262.zip	2015/08/13 16:23	286,7 KB
R2-153263.zip	2015/08/14 13:22	12 KB
R2-153264.zip	2015/08/15 1:28	66,2 KB
R2-153265.zip	2015/08/15 3:53	37,9 KB
R2-153266.zip	2015/08/15 3:53	61,7 KB
R2-153267.zip	2015/08/15 3:52	22,9 KB
R2-153268.zip	2015/08/15 3:52	26,7 KB
R2-153270.zip	2015/08/15 1:28	259,6 KB
R2-153271.zip	2015/08/15 1:28	60 KB
R2-153272.zip	2015/08/15 1:29	119,3 KB
R2-153273.zip	2015/08/15 3:52	190,7 KB
R2-153274.zip	2015/08/15 6:25	283,7 KB
R2-153275.zip	2015/08/15 1:29	58,5 KB
R2-153276.zip	2015/08/15 3:52	215,5 KB
R2-153277.zip	2015/08/23 2:48	88,9 KB
R2-153278.zip	2015/08/15 6:48	35,1 KB
R2-153279.zip	2015/08/15 3:52	85,4 KB
R2-153280.zip	2015/08/15 3:52	120,8 KB
R2-153281.zip	2015/08/15 3:52	427,9 KB
R2-153282.zip	2015/08/15 1:29	113,1 KB
R2-153283.zip	2015/08/15 1:29	17,8 KB
R2-153284.zip	2015/08/15 1:29	17,3 KB
R2-153285.zip	2015/08/15 3:52	16,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153286.zip	2015/08/15 1:30	18,2 KB
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R2-153288.zip	2015/08/15 1:30	470,2 KB
R2-153289.zip	2015/08/15 1:30	416,1 KB
R2-153290.zip	2015/08/15 1:30	46,3 KB
R2-153291.zip	2015/08/15 3:52	29,6 KB
R2-153292.zip	2015/08/15 1:31	49,1 KB
R2-153293.zip	2015/08/15 1:31	84,6 KB
R2-153294.zip	2015/08/15 6:58	38,5 KB
R2-153295.zip	2015/08/14 14:39	27,4 KB
R2-153296.zip	2015/08/14 13:22	106,6 KB
R2-153297.zip	2015/08/14 13:22	101,3 KB
R2-153298.zip	2015/08/14 13:22	25,8 KB
R2-153299.zip	2015/08/14 13:22	1205,8 KB
R2-153300.zip	2015/08/14 14:40	27,4 KB
R2-153301.zip	2015/08/14 5:54	586,2 KB
R2-153302.zip	2015/08/14 19:31	9,2 KB
R2-153303.zip	2015/08/14 19:31	9,6 KB
R2-153304.zip	2015/08/14 19:31	9,6 KB
R2-153305.zip	2015/08/14 18:32	7,9 KB
R2-153306.zip	2015/08/14 18:06	19,7 KB
R2-153307.zip	2015/08/15 5:33	37,1 KB
R2-153308.zip	2015/08/14 23:32	10,7 KB
R2-153309.zip	2015/08/14 23:32	9,8 KB
R2-153310.zip	2015/08/14 23:32	31,8 KB
R2-153311.zip	2015/08/15 1:23	40,3 KB
R2-153312.zip	2015/08/15 1:23	211,2 KB
R2-153313.zip	2015/08/15 1:24	68,3 KB
R2-153314.zip	2015/08/15 1:24	307,7 KB
R2-153315.zip	2015/08/15 1:24	63,1 KB
R2-153316.zip	2015/08/15 1:24	78,8 KB
R2-153317.zip	2015/08/15 1:24	129,9 KB
R2-153318.zip	2015/08/15 1:24	158,2 KB
R2-153319.zip	2015/08/15 1:24	62,9 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-153323.zip	2015/08/15 1:24	25,4 KB
R2-153324.zip	2015/08/14 4:19	154,5 KB
R2-153325.zip	2015/08/14 4:19	16,7 KB
R2-153326.zip	2015/08/14 6:11	27,6 KB
R2-153327.zip	2015/08/14 6:11	34,4 KB
R2-153329.zip	2015/08/14 6:11	24,1 KB
R2-153330.zip	2015/08/14 6:11	32,1 KB
R2-153331.zip	2015/08/14 6:11	88,1 KB
R2-153332.zip	2015/08/14 6:11	30,4 KB
R2-153333.zip	2015/08/14 6:11	21,5 KB
R2-153334.zip	2015/08/14 6:11	26,3 KB
R2-153335.zip	2015/08/14 10:16	72,9 KB
R2-153336.zip	2015/08/14 6:11	40,6 KB
R2-153337.zip	2015/08/14 10:16	121,8 KB
R2-153338.zip	2015/08/14 10:17	51,4 KB
R2-153339.zip	2015/08/14 6:35	36,2 KB
R2-153340.zip	2015/08/14 8:06	28,6 KB
R2-153341.zip	2015/08/14 6:35	34,9 KB
R2-153342.zip	2015/08/14 2:21	27,2 KB
R2-153343.zip	2015/08/14 2:23	318,8 KB
R2-153344.zip	2015/08/14 2:23	183,1 KB
R2-153345.zip	2015/08/15 6:05	34 KB
R2-153346.zip	2015/08/15 2:28	21 KB
R2-153347.zip	2015/08/14 8:14	208,6 KB
R2-153348.zip	2015/08/14 21:44	138,9 KB
R2-153349.zip	2015/08/14 8:15	33,2 KB
R2-153350.zip	2015/08/14 3:21	2587,7 KB
R2-153351.zip	2015/08/14 21:44	271,1 KB
R2-153352.zip	2015/08/14 8:17	132,3 KB
R2-153353.zip	2015/08/15 0:00	35,9 KB
R2-153354.zip	2015/08/15 0:00	24,9 KB
R2-153355.zip	2015/08/15 0:02	28,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153356.zip	2015/08/15 0:02	35,8 KB
R2-153357.zip	2015/08/15 0:02	77,2 KB
R2-153358.zip	2015/08/15 0:02	52 KB
R2-153359.zip	2015/08/15 0:02	239,8 KB
R2-153360.zip	2015/08/15 0:03	34 KB
R2-153361.zip	2015/08/15 0:03	64,1 KB
R2-153362.zip	2015/08/15 0:03	118,3 KB
R2-153363.zip	2015/08/15 0:03	100,1 KB
R2-153364.zip	2015/08/15 0:03	1240,7 KB
R2-153365.zip	2015/08/15 0:12	346,6 KB
R2-153366.zip	2015/08/15 0:14	34 KB
R2-153367.zip	2015/08/15 0:14	57,4 KB
R2-153368.zip	2015/08/15 0:14	123,9 KB
R2-153369.zip	2015/08/15 0:14	148,7 KB
R2-153370.zip	2015/08/14 21:44	37,1 KB
R2-153371.zip	2015/08/14 16:41	127,3 KB
R2-153372.zip	2015/08/14 16:41	37,3 KB
R2-153373.zip	2015/08/14 16:41	119,7 KB
R2-153374.zip	2015/08/14 16:41	514,8 KB
R2-153375.zip	2015/08/14 16:41	73,6 KB
R2-153376.zip	2015/08/14 16:47	193,5 KB
R2-153377.zip	2015/08/14 16:48	27,7 KB
R2-153378.zip	2015/08/14 16:47	121,8 KB
R2-153379.zip	2015/08/14 16:47	99,6 KB
R2-153380.zip	2015/08/14 16:47	54,5 KB
R2-153381.zip	2015/08/14 16:49	38,1 KB
R2-153382.zip	2015/08/14 16:49	100,3 KB
R2-153383.zip	2015/08/14 21:44	75,4 KB
R2-153384.zip	2015/08/14 8:17	42,7 KB
R2-153385.zip	2015/08/14 21:44	38,1 KB
R2-153386.zip	2015/08/14 21:45	124,8 KB
R2-153387.zip	2015/08/14 8:32	47,9 KB
R2-153388.zip	2015/08/14 3:23	74,1 KB
R2-153389.zip	2015/08/14 21:45	42 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-153390.zip	2015/08/14 3:23	72,8 KB
R2-153391.zip	2015/08/14 21:45	49 KB
R2-153392.zip	2015/08/15 7:04	33 KB
R2-153394.zip	2015/08/14 8:32	21 KB
R2-153396.zip	2015/08/14 21:45	550,3 KB
R2-153397.zip	2015/08/15 5:31	23,3 KB
R2-153398.zip	2015/08/15 5:31	25,9 KB
R2-153399.zip	2015/08/15 5:31	58,6 KB
R2-153400.zip	2015/08/15 5:31	23,1 KB
R2-153401.zip	2015/08/15 5:32	10,9 KB
R2-153402.zip	2015/08/15 5:40	70,5 KB
R2-153403.zip	2015/08/15 5:39	96,7 KB
R2-153404.zip	2015/08/15 5:39	84,4 KB
R2-153405.zip	2015/08/14 21:45	142,8 KB
R2-153406.zip	2015/08/14 21:45	953,7 KB
R2-153407.zip	2015/08/14 21:45	42,2 KB
R2-153408.zip	2015/08/14 21:45	117,9 KB
R2-153409.zip	2015/08/14 21:45	304,8 KB
R2-153410.zip	2015/08/14 21:45	22,7 KB
R2-153411.zip	2015/08/14 21:45	66,1 KB
R2-153412.zip	2015/08/14 21:45	34 KB
R2-153413.zip	2015/08/14 21:46	31,6 KB
R2-153414.zip	2015/08/14 21:46	34,2 KB
R2-153415.zip	2015/08/14 9:53	83,6 KB
R2-153416.zip	2015/08/14 9:46	447 KB
R2-153417.zip	2015/08/15 1:22	27,7 KB
R2-153418.zip	2015/08/15 1:22	36 KB
R2-153419.zip	2015/08/14 5:55	190,5 KB
R2-153420.zip	2015/08/15 1:22	41 KB
R2-153421.zip	2015/08/14 7:13	139,6 KB
R2-153422.zip	2015/08/14 5:26	33,5 KB
R2-153423.zip	2015/08/15 1:23	106 KB
R2-153424.zip	2015/08/14 12:27	3544 KB
R2-153425.zip	2015/08/14 15:50	34,3 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-153426.zip	2015/08/14 7:24	47,3 KB
R2-153427.zip	2015/08/15 1:23	45,2 KB
R2-153428.zip	2015/08/14 7:14	40,7 KB
R2-153429.zip	2015/08/14 8:35	389,5 KB
R2-153430.zip	2015/08/14 7:14	41,1 KB
R2-153431.zip	2015/08/14 8:35	24,2 KB
R2-153432.zip	2015/08/15 1:23	30,2 KB
R2-153433.zip	2015/08/14 7:14	41,6 KB
R2-153434.zip	2015/08/14 7:14	43,7 KB
R2-153435.zip	2015/08/15 1:23	28,4 KB
R2-153436.zip	2015/08/14 8:03	26 KB
R2-153437.zip	2015/08/15 1:23	48,1 KB
R2-153438.zip	2015/08/14 12:27	52,4 KB
R2-153439.zip	2015/08/14 12:27	218,9 KB
R2-153440.zip	2015/08/15 1:23	86,1 KB
R2-153441.zip	2015/08/14 12:27	117,9 KB
R2-153442.zip	2015/08/15 1:23	55,5 KB
R2-153443.zip	2015/08/14 8:03	133,8 KB
R2-153444.zip	2015/08/14 8:03	24,6 KB
R2-153445.zip	2015/08/15 1:23	29,3 KB
R2-153446.zip	2015/08/15 1:23	66,1 KB
R2-153447.zip	2015/08/15 1:23	31,6 KB
R2-153448.zip	2015/08/15 1:23	37,4 KB
R2-153449.zip	2015/08/15 1:23	59,4 KB
R2-153450.zip	2015/08/14 22:57	44,8 KB
R2-153451.zip	2015/08/14 12:45	64,4 KB
R2-153452.zip	2015/08/14 12:45	57,9 KB
R2-153453.zip	2015/08/14 12:45	84,5 KB
R2-153454.zip	2015/08/14 12:45	34,2 KB
R2-153455.zip	2015/08/14 12:45	79,6 KB
R2-153456.zip	2015/08/15 5:39	65,6 KB
R2-153457.zip	2015/08/14 11:02	36,1 KB
R2-153458.zip	2015/08/14 11:02	31,7 KB
R2-153459.zip	2015/08/14 11:02	46,4 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153460.zip	2015/08/14 11:02	16,6 KB
R2-153461.zip	2015/08/14 21:26	183,2 KB
R2-153462.zip	2015/08/14 21:26	58,2 KB
R2-153463.zip	2015/08/15 3:20	50,4 KB
R2-153464.zip	2015/08/14 13:01	33,4 KB
R2-153465.zip	2015/08/14 14:49	19,8 KB
R2-153466.zip	2015/08/14 13:02	24,6 KB
R2-153467.zip	2015/08/15 3:20	52 KB
R2-153468.zip	2015/08/14 11:02	29,7 KB
R2-153469.zip	2015/08/14 11:02	21,7 KB
R2-153470.zip	2015/08/14 11:02	23 KB
R2-153471.zip	2015/08/14 11:02	24,1 KB
R2-153472.zip	2015/08/14 12:37	29,8 KB
R2-153473.zip	2015/08/14 12:37	66,1 KB
R2-153474.zip	2015/08/14 13:02	14,6 KB
R2-153475.zip	2015/08/14 12:37	15 KB
R2-153476.zip	2015/08/14 12:37	18 KB
R2-153477.zip	2015/08/14 13:02	20,9 KB
R2-153478.zip	2015/08/14 13:02	20,7 KB
R2-153479.zip	2015/08/15 3:35	27,5 KB
R2-153480.zip	2015/08/14 21:26	61,1 KB
R2-153481.zip	2015/08/14 21:26	110,8 KB
R2-153482.zip	2015/08/14 21:26	25,7 KB
R2-153483.zip	2015/08/14 21:26	82,5 KB
R2-153484.zip	2015/08/15 3:35	28,8 KB
R2-153485.zip	2015/08/14 10:17	179,9 KB
R2-153486.zip	2015/08/14 8:45	236,8 KB
R2-153488.zip	2015/08/14 8:17	289,3 KB
R2-153489.zip	2015/08/14 21:02	704,8 KB
R2-153490.zip	2015/08/14 21:02	175,7 KB
R2-153491.zip	2015/08/14 8:43	53,7 KB
R2-153492.zip	2015/08/14 13:37	28,4 KB
R2-153493.zip	2015/08/14 21:08	56,2 KB
R2-153494.zip	2015/08/15 2:23	38,8 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
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R2-153496.zip	2015/08/14 21:02	24,9 KB
R2-153497.zip	2015/08/15 5:48	601,1 KB
R2-153498.zip	2015/08/15 3:35	38 KB
R2-153499.zip	2015/08/15 5:48	201,8 KB
R2-153500.zip	2015/08/15 6:03	109,6 KB
R2-153501.zip	2015/08/15 3:35	37,2 KB
R2-153502.zip	2015/08/15 3:35	68,7 KB
R2-153503.zip	2015/08/15 3:35	35,1 KB
R2-153504.zip	2015/08/14 9:51	43,2 KB
R2-153505.zip	2015/08/14 9:51	34,3 KB
R2-153506.zip	2015/08/14 9:51	255,1 KB
R2-153507.zip	2015/08/14 9:15	96,2 KB
R2-153508.zip	2015/08/14 9:25	17,1 KB
R2-153509.zip	2015/08/14 9:51	124,8 KB
R2-153510.zip	2015/08/15 3:53	52,2 KB
R2-153511.zip	2015/08/15 1:31	25,7 KB
R2-153512.zip	2015/08/15 1:31	70,9 KB
R2-153513.zip	2015/08/15 6:12	151,4 KB
R2-153514.zip	2015/08/14 8:53	41,1 KB
R2-153515.zip	2015/08/14 9:26	48 KB
R2-153516.zip	2015/08/14 9:21	250 KB
R2-153517.zip	2015/08/14 9:21	46,5 KB
R2-153518.zip	2015/08/14 9:17	17,7 KB
R2-153519.zip	2015/08/14 9:06	19,1 KB
R2-153520.zip	2015/08/14 9:15	41,2 KB
R2-153521.zip	2015/08/14 9:21	46,1 KB
R2-153522.zip	2015/08/14 9:15	31,7 KB
R2-153523.zip	2015/08/14 9:21	31,3 KB
R2-153524.zip	2015/08/14 9:17	11,6 KB
R2-153525.zip	2015/08/14 9:21	46 KB
R2-153526.zip	2015/08/14 9:20	75,9 KB
R2-153527.zip	2015/08/14 9:20	46,1 KB
R2-153528.zip	2015/08/14 9:21	62,6 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-153530.zip	2015/08/14 9:21	62,3 KB
R2-153531.zip	2015/08/14 23:41	52,9 KB
R2-153532.zip	2015/08/15 5:39	15,5 KB
R2-153533.zip	2015/08/15 5:40	20,1 KB
R2-153534.zip	2015/08/15 5:41	16,2 KB
R2-153535.zip	2015/08/15 5:41	17,7 KB
R2-153536.zip	2015/08/15 5:41	25,7 KB
R2-153537.zip	2015/08/15 5:42	21,5 KB
R2-153538.zip	2015/08/15 5:42	16,8 KB
R2-153539.zip	2015/08/15 5:43	64,9 KB
R2-153540.zip	2015/08/15 5:43	346,9 KB
R2-153541.zip	2015/08/15 5:44	57,4 KB
R2-153542.zip	2015/08/15 5:44	59,3 KB
R2-153543.zip	2015/08/15 5:44	67 KB
R2-153544.zip	2015/08/15 5:45	67,3 KB
R2-153545.zip	2015/08/15 5:45	12,9 KB
R2-153546.zip	2015/08/15 5:46	19 KB
R2-153547.zip	2015/08/15 5:46	11,3 KB
R2-153548.zip	2015/08/15 2:11	71,1 KB
R2-153549.zip	2015/08/14 15:34	204,8 KB
R2-153550.zip	2015/08/14 15:58	10,1 KB
R2-153551.zip	2015/08/14 15:34	57,9 KB
R2-153552.zip	2015/08/14 15:58	42,3 KB
R2-153553.zip	2015/08/14 15:34	116,4 KB
R2-153554.zip	2015/08/14 15:58	11,4 KB
R2-153555.zip	2015/08/14 15:58	13,3 KB
R2-153556.zip	2015/08/14 15:34	52,9 KB
R2-153557.zip	2015/08/14 15:34	57,7 KB
R2-153558.zip	2015/08/14 23:42	48,7 KB
R2-153559.zip	2015/08/14 10:05	34,6 KB
R2-153560.zip	2015/08/14 23:42	48,2 KB
R2-153561.zip	2015/08/14 14:13	30,9 KB
R2-153562.zip	2015/08/14 14:13	26,4 KB
R2-153563.zip	2015/08/14 10:20	34,5 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-153565.zip	2015/08/14 23:47	170,6 KB
R2-153566.zip	2015/08/14 10:26	32,2 KB
R2-153567.zip	2015/08/14 13:21	19,1 KB
R2-153568.zip	2015/08/14 14:59	219 KB
R2-153569.zip	2015/08/14 14:09	69,9 KB
R2-153570.zip	2015/08/14 13:49	61,1 KB
R2-153571.zip	2015/08/14 14:00	174,2 KB
R2-153572.zip	2015/08/14 11:00	19,3 KB
R2-153573.zip	2015/08/14 14:00	50,5 KB
R2-153574.zip	2015/08/14 15:15	114 KB
R2-153575.zip	2015/08/14 12:19	646,7 KB
R2-153576.zip	2015/08/14 12:16	21,6 KB
R2-153577.zip	2015/08/14 12:17	296 KB
R2-153578.zip	2015/08/14 12:44	257,7 KB
R2-153579.zip	2015/08/15 1:27	16,7 KB
R2-153580.zip	2015/08/14 18:40	88,2 KB
R2-153581.zip	2015/08/14 18:40	22,2 KB
R2-153582.zip	2015/08/14 18:41	53,4 KB
R2-153583.zip	2015/08/14 14:35	32,2 KB
R2-153584.zip	2015/08/14 14:36	15,5 KB
R2-153585.zip	2015/08/14 14:36	104,8 KB
R2-153586.zip	2015/08/14 22:00	21 KB
R2-153587.zip	2015/08/14 13:32	23,5 KB
R2-153588.zip	2015/08/14 13:24	25,5 KB
R2-153589.zip	2015/08/14 14:52	75,9 KB
R2-153590.zip	2015/08/14 14:53	29,1 KB
R2-153591.zip	2015/08/14 23:40	81,3 KB
R2-153592.zip	2015/08/14 21:15	23 KB
R2-153593.zip	2015/08/14 13:44	116,1 KB
R2-153594.zip	2015/08/14 21:18	21,4 KB
R2-153595.zip	2015/08/14 21:20	122 KB
R2-153596.zip	2015/08/14 21:21	36,8 KB
R2-153597.zip	2015/08/14 21:23	23,7 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
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R2-153599.zip	2015/08/14 21:26	42,4 KB
R2-153600.zip	2015/08/15 7:13	49,8 KB
R2-153601.zip	2015/08/14 21:26	124,5 KB
R2-153602.zip	2015/08/14 21:27	1224,7 KB
R2-153603.zip	2015/08/14 21:28	40,1 KB
R2-153604.zip	2015/08/14 13:35	29,4 KB
R2-153605.zip	2015/08/14 21:29	21,9 KB
R2-153606.zip	2015/08/14 14:53	15,1 KB
R2-153607.zip	2015/08/14 14:52	15 KB
R2-153608.zip	2015/08/14 14:49	44,3 KB
R2-153609.zip	2015/08/14 14:49	52 KB
R2-153610.zip	2015/08/14 14:49	44,3 KB
R2-153611.zip	2015/08/14 14:49	29,3 KB
R2-153612.zip	2015/08/14 14:49	29,2 KB
R2-153613.zip	2015/08/14 14:49	29,3 KB
R2-153614.zip	2015/08/14 14:52	19,1 KB
R2-153615.zip	2015/08/14 14:52	18 KB
R2-153616.zip	2015/08/14 18:05	35,2 KB
R2-153617.zip	2015/08/14 14:16	24,8 KB
R2-153619.zip	2015/08/14 14:17	24,2 KB
R2-153620.zip	2015/08/14 17:38	21,2 KB
R2-153621.zip	2015/08/14 17:44	19,7 KB
R2-153622.zip	2015/08/14 17:44	27,1 KB
R2-153623.zip	2015/08/14 17:44	30 KB
R2-153624.zip	2015/08/14 17:44	22,2 KB
R2-153625.zip	2015/08/14 19:22	131,2 KB
R2-153626.zip	2015/08/15 0:02	26,9 KB
R2-153627.zip	2015/08/14 18:05	692,2 KB
R2-153628.zip	2015/08/15 0:01	70,4 KB
R2-153629.zip	2015/08/14 16:04	19,9 KB
R2-153630.zip	2015/08/15 7:06	16,5 KB
R2-153631.zip	2015/08/15 7:06	15,3 KB
R2-153632.zip	2015/08/14 16:04	20,4 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-153634.zip	2015/08/14 16:04	23,6 KB
R2-153635.zip	2015/08/14 16:19	93,7 KB
R2-153636.zip	2015/08/14 16:04	20,6 KB
R2-153637.zip	2015/08/14 16:22	54,9 KB
R2-153638.zip	2015/08/14 16:25	51,5 KB
R2-153639.zip	2015/08/14 15:34	131,7 KB
R2-153640.zip	2015/08/14 16:26	74 KB
R2-153641.zip	2015/08/14 16:26	52,7 KB
R2-153642.zip	2015/08/14 19:32	76 KB
R2-153643.zip	2015/08/14 19:32	31,6 KB
R2-153644.zip	2015/08/14 19:32	57,2 KB
R2-153645.zip	2015/08/14 19:11	22,9 KB
R2-153646.zip	2015/08/14 19:38	19,6 KB
R2-153647.zip	2015/08/14 19:38	21,2 KB
R2-153648.zip	2015/08/14 19:11	110,5 KB
R2-153649.zip	2015/08/14 19:45	22,4 KB
R2-153650.zip	2015/08/14 19:45	19 KB
R2-153651.zip	2015/08/14 19:12	23,4 KB
R2-153652.zip	2015/08/14 19:12	50,7 KB
R2-153653.zip	2015/08/14 19:50	993,5 KB
R2-153654.zip	2015/08/14 20:12	19,5 KB
R2-153655.zip	2015/08/14 20:12	151 KB
R2-153656.zip	2015/08/14 18:17	46,7 KB
R2-153657.zip	2015/08/14 18:17	406,1 KB
R2-153658.zip	2015/08/14 18:17	406,1 KB
R2-153659.zip	2015/08/14 18:17	24,3 KB
R2-153660.zip	2015/08/14 18:17	51,4 KB
R2-153661.zip	2015/08/14 16:04	335,8 KB
R2-153662.zip	2015/08/15 5:32	24 KB
R2-153663.zip	2015/08/14 16:04	41,9 KB
R2-153664.zip	2015/08/14 17:18	80,3 KB
R2-153665.zip	2015/08/15 2:40	105,2 KB
R2-153666.zip	2015/08/14 16:04	36 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153667.zip	2015/08/14 16:05	506,2 KB
R2-153668.zip	2015/08/15 2:40	30 KB
R2-153669.zip	2015/08/15 2:39	32,6 KB
R2-153670.zip	2015/08/15 2:39	157,5 KB
R2-153671.zip	2015/08/14 16:04	21,2 KB
R2-153672.zip	2015/08/15 2:39	162,3 KB
R2-153673.zip	2015/08/14 17:11	23,1 KB
R2-153674.zip	2015/08/15 2:39	8,1 KB
R2-153675.zip	2015/08/15 1:31	129,1 KB
R2-153676.zip	2015/08/15 3:53	87,2 KB
R2-153677.zip	2015/08/14 19:47	24,8 KB
R2-153679.zip	2015/08/14 17:11	33,8 KB
R2-153680.zip	2015/08/15 1:28	49,1 KB
R2-153682.zip	2015/08/15 2:39	593,5 KB
R2-153683.zip	2015/08/14 20:18	96,6 KB
R2-153684.zip	2015/08/15 1:28	29,4 KB
R2-153685.zip	2015/08/14 20:21	100,8 KB
R2-153686.zip	2015/08/14 17:23	21,2 KB
R2-153687.zip	2015/08/14 21:17	18,9 KB
R2-153688.zip	2015/08/15 6:52	39,3 KB
R2-153689.zip	2015/08/14 20:21	216,4 KB
R2-153690.zip	2015/08/15 6:52	20 KB
R2-153691.zip	2015/08/15 6:52	39,1 KB
R2-153692.zip	2015/08/14 17:23	19,6 KB
R2-153693.zip	2015/08/14 20:21	259,7 KB
R2-153694.zip	2015/08/15 6:52	10 KB
R2-153695.zip	2015/08/15 6:52	32,9 KB
R2-153697.zip	2015/08/15 5:33	243,6 KB
R2-153698.zip	2015/08/14 17:23	21,2 KB
R2-153699.zip	2015/08/14 17:23	200,9 KB
R2-153700.zip	2015/08/14 23:32	107,7 KB
R2-153701.zip	2015/08/14 23:32	38,2 KB
R2-153702.zip	2015/08/14 23:32	24,2 KB
R2-153703.zip	2015/08/14 23:32	65,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153704.zip	2015/08/14 23:32	38,4 KB
R2-153705.zip	2015/08/14 17:55	31,9 KB
R2-153706.zip	2015/08/14 17:55	19,1 KB
R2-153707.zip	2015/08/14 21:17	25,6 KB
R2-153708.zip	2015/08/15 3:52	30,6 KB
R2-153709.zip	2015/08/15 3:52	19,6 KB
R2-153710.zip	2015/08/14 21:17	29,2 KB
R2-153711.zip	2015/08/14 23:59	115,3 KB
R2-153712.zip	2015/08/15 3:53	148,5 KB
R2-153713.zip	2015/08/14 21:17	20,3 KB
R2-153714.zip	2015/08/15 3:53	15,9 KB
R2-153715.zip	2015/08/15 3:53	16,2 KB
R2-153716.zip	2015/08/14 23:59	66,4 KB
R2-153717.zip	2015/08/14 23:59	123,7 KB
R2-153718.zip	2015/08/14 23:59	167,6 KB
R2-153719.zip	2015/08/14 23:59	62,3 KB
R2-153720.zip	2015/08/14 18:28	23,8 KB
R2-153721.zip	2015/08/14 23:59	64,6 KB
R2-153722.zip	2015/08/14 18:35	26,7 KB
R2-153723.zip	2015/08/14 18:52	121,1 KB
R2-153724.zip	2015/08/14 18:52	254,6 KB
R2-153725.zip	2015/08/14 18:52	255 KB
R2-153726.zip	2015/08/15 2:31	229,1 KB
R2-153727.zip	2015/08/14 18:52	179,8 KB
R2-153728.zip	2015/08/14 18:52	25,5 KB
R2-153729.zip	2015/08/14 20:37	43,1 KB
R2-153730.zip	2015/08/14 19:05	20,6 KB
R2-153731.zip	2015/08/14 20:37	180,8 KB
R2-153732.zip	2015/08/14 20:37	39,8 KB
R2-153733.zip	2015/08/15 6:45	23,4 KB
R2-153734.zip	2015/08/14 20:37	147,2 KB
R2-153735.zip	2015/08/15 3:55	25,9 KB
R2-153736.zip	2015/08/15 3:55	22,7 KB
R2-153737.zip	2015/08/15 3:55	84,4 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153738.zip	2015/08/14 20:04	18,2 KB
R2-153739.zip	2015/08/15 3:55	199,6 KB
R2-153740.zip	2015/08/14 21:15	23,9 KB
R2-153741.zip	2015/08/14 20:37	14,2 KB
R2-153742.zip	2015/08/14 20:14	142,5 KB
R2-153743.zip	2015/08/14 20:37	14,7 KB
R2-153744.zip	2015/08/15 1:18	44,7 KB
R2-153745.zip	2015/08/15 2:59	353,3 KB
R2-153746.zip	2015/08/15 2:59	47,9 KB
R2-153747.zip	2015/08/15 1:18	45,1 KB
R2-153748.zip	2015/08/15 6:52	205,1 KB
R2-153749.zip	2015/08/15 1:18	13,7 KB
R2-153750.zip	2015/08/15 8:04	167,6 KB
R2-153751.zip	2015/08/14 20:26	40,7 KB
R2-153752.zip	2015/08/14 21:26	16,8 KB
R2-153753.zip	2015/08/14 20:42	44,1 KB
R2-153754.zip	2015/08/15 1:27	33,1 KB
R2-153755.zip	2015/08/15 1:27	34,6 KB
R2-153756.zip	2015/08/14 21:15	53,9 KB
R2-153757.zip	2015/08/15 5:59	15,5 KB
R2-153758.zip	2015/08/14 21:58	25,1 KB
R2-153759.zip	2015/08/15 1:27	68,5 KB
R2-153760.zip	2015/08/14 22:04	40,1 KB
R2-153761.zip	2015/08/15 4:18	43,7 KB
R2-153762.zip	2015/08/15 4:18	29,6 KB
R2-153763.zip	2015/08/15 6:12	192,8 KB
R2-153764.zip	2015/08/15 1:34	103,9 KB
R2-153765.zip	2015/08/15 1:34	109,7 KB
R2-153766.zip	2015/08/15 1:34	180,7 KB
R2-153767.zip	2015/08/15 1:34	40,3 KB
R2-153768.zip	2015/08/15 1:34	131 KB
R2-153769.zip	2015/08/15 1:38	809,1 KB
R2-153770.zip	2015/08/15 1:39	1943,6 KB
R2-153771.zip	2015/08/15 1:39	55,3 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153772.zip	2015/08/15 1:39	315,3 KB
R2-153773.zip	2015/08/15 1:39	63 KB
R2-153774.zip	2015/08/15 1:37	203 KB
R2-153775.zip	2015/08/14 22:14	953,7 KB
R2-153776.zip	2015/08/14 22:14	42,3 KB
R2-153777.zip	2015/08/14 22:20	304,8 KB
R2-153778.zip	2015/08/14 22:38	118,9 KB
R2-153779.zip	2015/08/14 22:38	96,1 KB
R2-153780.zip	2015/08/15 1:27	28,7 KB
R2-153781.zip	2015/08/15 3:30	104,4 KB
R2-153782.zip	2015/08/15 4:58	26,6 KB
R2-153783.zip	2015/08/15 6:12	27,1 KB
R2-153785.zip	2015/08/15 3:32	379,6 KB
R2-153786.zip	2015/08/15 0:52	24 KB
R2-153787.zip	2015/08/15 0:52	78,4 KB
R2-153788.zip	2015/08/15 0:52	26,8 KB
R2-153789.zip	2015/08/15 0:52	22,9 KB
R2-153790.zip	2015/08/15 0:22	19,8 KB
R2-153791.zip	2015/08/15 4:20	19,9 KB
R2-153792.zip	2015/08/15 1:24	33,5 KB
R2-153793.zip	2015/08/15 0:15	39,7 KB
R2-153794.zip	2015/08/15 0:16	69,9 KB
R2-153795.zip	2015/08/15 0:15	38,9 KB
R2-153796.zip	2015/08/15 0:16	44,7 KB
R2-153798.zip	2015/08/15 2:31	97,2 KB
R2-153799.zip	2015/08/15 0:39	38,6 KB
R2-153800.zip	2015/08/15 2:09	38,4 KB
R2-153801.zip	2015/08/15 2:39	48,8 KB
R2-153802.zip	2015/08/15 0:51	20,2 KB
R2-153803.zip	2015/08/15 2:39	88,3 KB
R2-153804.zip	2015/08/15 1:27	185,9 KB
R2-153805.zip	2015/08/15 2:39	94,4 KB
R2-153806.zip	2015/08/15 2:39	339,7 KB
R2-153807.zip	2015/08/15 5:32	85,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153808.zip	2015/08/15 2:39	50,2 KB
R2-153809.zip	2015/08/15 3:12	49,8 KB
R2-153810.zip	2015/08/15 3:53	85 KB
R2-153811.zip	2015/08/15 2:00	31,1 KB
R2-153812.zip	2015/08/15 2:04	36,4 KB
R2-153813.zip	2015/08/15 2:07	34 KB
R2-153814.zip	2015/08/15 2:31	1254 KB
R2-153815.zip	2015/08/15 3:19	177,6 KB
R2-153816.zip	2015/08/15 3:19	188 KB
R2-153817.zip	2015/08/15 3:19	36,7 KB
R2-153818.zip	2015/08/15 3:19	35 KB
R2-153819.zip	2015/08/15 5:59	36,9 KB
R2-153820.zip	2015/08/15 5:59	172,5 KB
R2-153821.zip	2015/08/15 5:59	79,2 KB
R2-153822.zip	2015/08/15 3:55	23,4 KB
R2-153823.zip	2015/08/15 3:49	46,7 KB
R2-153824.zip	2015/08/15 4:57	30,1 KB
R2-153825.zip	2015/08/15 4:57	30,5 KB
R2-153826.zip	2015/08/15 4:57	61,6 KB
R2-153827.zip	2015/08/15 4:57	28,9 KB
R2-153828.zip	2015/08/15 4:57	36 KB
R2-153829.zip	2015/08/15 4:57	28,5 KB
R2-153830.zip	2015/08/15 4:57	30,8 KB
R2-153831.zip	2015/08/15 4:57	30,6 KB
R2-153832.zip	2015/08/15 5:32	110,1 KB
R2-153833.zip	2015/08/17 11:48	56,6 KB
R2-153834.zip	2015/08/15 5:13	232,2 KB
R2-153835.zip	2015/08/15 5:33	76,3 KB
R2-153836.zip	2015/08/15 5:33	41,5 KB
R2-153837.zip	2015/08/15 6:03	84,1 KB
R2-153838.zip	2015/08/15 6:41	36,5 KB
R2-153839.zip	2015/08/15 6:45	32,2 KB
R2-153840.zip	2015/08/15 6:59	261,3 KB
R2-153841.zip	2015/08/23 2:48	278,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153842.zip	2015/08/23 2:49	46,9 KB
R2-153845.zip	2015/08/23 2:49	168,3 KB
R2-153846.zip	2015/08/23 2:49	550,6 KB
R2-153847.zip	2015/08/23 2:49	51,3 KB
R2-153848.zip	2015/08/28 6:57	11,4 KB
R2-153849.zip	2015/08/23 2:49	17,2 KB
R2-153850.zip	2015/08/23 2:50	343,8 KB
R2-153851.zip	2015/08/23 2:50	169,2 KB
R2-153852.zip	2015/08/23 2:50	388 KB
R2-153853.zip	2015/08/28 6:57	11,5 KB
R2-153854.zip	2015/08/28 9:24	9,6 KB
R2-153855.zip	2015/08/28 6:57	48,2 KB
R2-153856.zip	2015/08/28 6:57	17,3 KB
R2-153857.zip	2015/08/28 6:57	32 KB
R2-153858.zip	2015/08/28 6:57	14,6 KB
R2-153859.zip	2015/08/28 6:57	34,8 KB
R2-153860.zip	2015/08/28 6:58	34,1 KB
R2-153861.zip	2015/08/28 6:58	311,9 KB
R2-153862.zip	2015/08/28 6:58	20,1 KB
R2-153863.zip	2015/08/28 6:58	23,3 KB
R2-153864.zip	2015/08/28 6:58	64,6 KB
R2-153865.zip	2015/08/28 6:58	18,5 KB
R2-153866.zip	2015/08/28 6:58	9,5 KB
R2-153868.zip	2015/08/28 9:24	15,5 KB
R2-153869.zip	2015/08/28 6:59	2587,7 KB
R2-153870.zip	2015/08/28 9:24	24,8 KB
R2-153871.zip	2015/08/28 9:24	14 KB
R2-153872.zip	2015/08/28 6:59	64,5 KB
R2-153873.zip	2015/08/28 6:59	9,3 KB
R2-153874.zip	2015/08/28 6:59	31,3 KB
R2-153875.zip	2015/08/28 6:59	31,9 KB
R2-153876.zip	2015/09/01 13:40	14,5 KB
R2-153877.zip	2015/08/28 6:59	35,4 KB
R2-153878.zip	2015/08/28 7:00	40,8 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153879.zip	2015/09/05 9:06	90,5 KB
R2-153880.zip	2015/09/05 9:07	123,1 KB
R2-153881.zip	2015/08/28 7:00	15,7 KB
R2-153882.zip	2015/08/28 9:24	9,9 KB
R2-153883.zip	2015/08/28 7:00	12,2 KB
R2-153885.zip	2015/08/28 7:00	200,2 KB
R2-153886.zip	2015/08/28 7:00	11,9 KB
R2-153887.zip	2015/08/28 7:00	15,7 KB
R2-153888.zip	2015/08/28 7:00	13,8 KB
R2-153889.zip	2015/09/25 12:31	144,9 KB
R2-153890.zip	2015/09/14 14:29	150,4 KB
R2-153891.zip	2015/08/28 7:00	40,1 KB
R2-153893.zip	2015/08/28 7:00	34,9 KB
R2-153894.zip	2015/08/28 7:00	25,7 KB
R2-153895.zip	2015/08/28 7:00	52 KB
R2-153896.zip	2015/08/28 7:00	59,8 KB
R2-153897.zip	2015/08/28 7:00	11,6 KB
R2-153898.zip	2015/08/28 7:00	15,7 KB
R2-153899.zip	2015/08/28 7:00	10,4 KB
R2-153900.zip	2015/08/28 7:00	26,3 KB
R2-153901.zip	2015/08/28 7:00	35,3 KB
R2-153902.zip	2015/08/28 7:00	59,3 KB
R2-153903.zip	2015/08/28 7:00	11,4 KB
R2-153904.zip	2015/08/28 7:01	10,3 KB
R2-153905.zip	2015/09/05 8:55	20,2 KB
R2-153906.zip	2015/08/28 7:01	23,4 KB
R2-153909.zip	2015/08/28 9:24	12,7 KB
R2-153910.zip	2015/09/15 14:01	1110,4 KB
R2-153911.zip	2015/08/28 9:45	15,4 KB
R2-153912.zip	2015/08/28 9:45	25 KB
R2-153913.zip	2015/08/28 9:46	14,1 KB
R2-153914.zip	2015/08/28 9:46	12,6 KB
R2-153915.zip	2015/09/01 13:40	9,9 KB
R2-153916.zip	2015/08/31 13:34	9,3 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153917.zip	2015/09/05 8:55	17,1 KB
R2-153918.zip	2015/09/05 9:07	32,2 KB
R2-153919.zip	2015/09/05 9:07	32,3 KB
R2-153920.zip	2015/08/28 7:01	30 KB
R2-153921.zip	2015/08/28 7:01	20,3 KB
R2-153922.zip	2015/08/28 7:01	42,2 KB
R2-153923.zip	2015/08/28 7:01	20 KB
R2-153924.zip	2015/08/28 7:01	20,6 KB
R2-153925.zip	2015/08/28 7:01	21 KB
R2-153926.zip	2015/08/28 7:01	43 KB
R2-153927.zip	2015/08/28 7:01	14,1 KB
R2-153928.zip	2015/08/28 7:01	181,3 KB
R2-153929.zip	2015/08/28 7:01	21,3 KB
R2-153930.zip	2015/08/28 7:01	21 KB
R2-153931.zip	2015/08/28 7:01	20,3 KB
R2-153933.zip	2015/08/28 7:01	24,7 KB
R2-153934.zip	2015/08/28 7:01	258,7 KB
R2-153935.zip	2015/08/28 7:01	60,2 KB
R2-153936.zip	2015/08/28 7:01	25,6 KB
R2-153937.zip	2015/08/28 7:02	47,7 KB
R2-153938.zip	2015/08/28 7:02	18,6 KB
R2-153939.zip	2015/08/28 7:02	12,9 KB
R2-153940.zip	2015/08/28 7:02	12,1 KB
R2-153941.zip	2015/08/28 7:02	193,5 KB
R2-153942.zip	2015/08/28 7:02	55 KB
R2-153943.zip	2015/08/28 7:02	23 KB
R2-153944.zip	2015/08/28 7:02	13 KB
R2-153945.zip	2015/08/28 7:02	112,1 KB
R2-153946.zip	2015/09/11 10:00	63,4 KB
R2-153947.zip	2015/08/28 7:03	1149,9 KB
R2-153948.zip	2015/08/28 7:03	13,1 KB
R2-153949.zip	2015/08/28 7:03	35,9 KB
R2-153950.zip	2015/08/28 7:03	232,2 KB
R2-153951.zip	2015/08/28 7:03	40,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-153952.zip	2015/08/28 7:03	47,8 KB
R2-153953.zip	2015/08/28 7:03	65 KB
R2-153954.zip	2015/08/28 7:03	17,6 KB
R2-153955.zip	2015/08/28 7:03	17,6 KB
R2-153956.zip	2015/08/28 7:03	17,8 KB
R2-153957.zip	2015/08/28 9:24	133,8 KB
R2-153958.zip	2015/08/28 7:03	578,4 KB
R2-153959.zip	2015/08/28 7:03	14 KB
R2-153960.zip	2015/08/28 7:04	43 KB
R2-153961.zip	2015/09/08 12:33	580,3 KB
R2-153962.zip	2015/08/28 9:24	47,7 KB
R2-153963.zip	2015/08/28 9:25	112,3 KB
R2-153964.zip	2015/09/14 14:28	1150,8 KB
R2-153965.zip	2015/08/28 9:25	35,8 KB
R2-153966.zip	2015/08/28 9:25	12,8 KB
R2-153967.zip	2015/09/15 13:51	19,5 KB
R2-153968.zip	2015/09/15 13:51	34,1 KB
R2-153969.zip	2015/08/28 9:25	12 KB
R2-153970.zip	2015/08/28 9:25	208,6 KB
R2-153971.zip	2015/09/07 19:19	135,6 KB
R2-153972.zip	2015/09/25 9:00	591,9 KB
R2-153973.zip	2015/08/31 13:34	39,2 KB
R2-153974.zip	2015/09/05 8:56	55,4 KB
R2-153975.zip	2015/09/05 8:56	23,1 KB
R2-153976.zip	2015/09/08 13:37	40,7 KB
R2-153977.zip	2015/09/08 13:37	45,8 KB
R2-153978.zip	2015/09/08 13:37	63,7 KB
R2-153979.zip	2015/09/08 13:37	18 KB
R2-153980.zip	2015/09/08 13:37	18 KB
R2-153981.zip	2015/09/08 13:37	18,5 KB
R2-153982.zip	2015/09/08 12:30	133,5 KB
R2-153983.zip	2015/09/05 9:11	12 KB
R2-153984.zip	2015/09/22 7:50	1096,3 KB
R2-153985.zip	2015/09/15 13:43	25,9 KB

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sort by name/desc	sort by date/desc	sort by size/desc
TDoc_List_Meeting_RAN2#91.xlsm	2016/11/14 0:26	297,4 KB
TDoc_List_Meeting_RAN2#91.xlsx	2017/10/21 21:55	290,9 KB
TDoc_List_Meeting_RAN2#91.zip	2018/01/10 16:47	553,4 KB

951 items.

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Appendix 24

www.3gpp.org / ftp / tsg_ran / WG2_RL2 / TSGR2_91bis / Docs

sort by name/desc	sort by date/desc	sort by size/desc
R2-154001.zip	2015/09/21 17:52	300,9 KB
R2-154002.zip	2015/09/25 14:06	1124,5 KB
R2-154003.zip	2015/10/03 15:37	423 KB
R2-154004.zip	2015/09/23 15:36	47,3 KB
R2-154005.zip	2015/09/18 14:09	47,5 KB
R2-154006.zip	2015/09/18 14:09	49,7 KB
R2-154007.zip	2015/09/18 14:09	18,7 KB
R2-154008.zip	2015/09/18 14:09	16,4 KB
R2-154009.zip	2015/09/18 14:09	28,4 KB
R2-154010.zip	2015/09/18 14:09	14,4 KB
R2-154011.zip	2015/09/18 14:09	28,6 KB
R2-154012.zip	2015/09/18 14:09	15,2 KB
R2-154013.zip	2015/09/18 14:09	14,5 KB
R2-154014.zip	2015/09/18 14:09	11,1 KB
R2-154015.zip	2015/09/18 14:09	31,3 KB
R2-154016.zip	2015/09/18 14:09	189,2 KB
R2-154017.zip	2015/09/18 14:09	14,2 KB
R2-154018.zip	2015/09/18 14:09	11 KB
R2-154019.zip	2015/09/18 14:09	13 KB
R2-154020.zip	2015/09/18 14:09	1203 KB
R2-154021.zip	2015/09/18 14:09	10,7 KB
R2-154022.zip	2015/09/18 14:09	20,4 KB
R2-154023.zip	2015/09/23 15:38	242,6 KB
R2-154024.zip	2015/09/29 14:35	112,9 KB
R2-154025.zip	2015/09/29 14:35	21,9 KB
R2-154026.zip	2015/10/02 13:10	25,8 KB
R2-154027.zip	2015/10/03 12:16	93,8 KB
R2-154028.zip	2015/10/08 6:10	23,4 KB
R2-154029.zip	2015/10/08 6:10	13,9 KB
R2-154030.zip	2015/10/08 6:10	10,1 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154031.zip	2015/10/09 15:32	1127,6 KB
R2-154032.zip	2015/10/09 15:32	641,5 KB
R2-154033.zip	2015/09/26 1:06	587,9 KB
R2-154034.zip	2015/09/25 8:34	139 KB
R2-154035.zip	2015/09/25 8:36	44,7 KB
R2-154036.zip	2015/09/25 8:36	37 KB
R2-154037.zip	2015/09/25 8:36	41,8 KB
R2-154038.zip	2015/09/26 5:16	36,1 KB
R2-154039.zip	2015/09/26 5:16	36,2 KB
R2-154040.zip	2015/09/26 5:16	30,8 KB
R2-154041.zip	2015/09/26 5:16	29,6 KB
R2-154042.zip	2015/09/26 5:16	36,3 KB
R2-154045.zip	2015/09/26 0:59	132,8 KB
R2-154046.zip	2015/09/26 0:59	52,5 KB
R2-154047.zip	2015/09/26 0:59	52,2 KB
R2-154048.zip	2015/09/26 0:59	39,8 KB
R2-154050.zip	2015/09/26 0:59	114,1 KB
R2-154051.zip	2015/09/26 0:59	187,2 KB
R2-154052.zip	2015/09/26 0:58	284,2 KB
R2-154055.zip	2015/09/26 0:58	549,2 KB
R2-154056.zip	2015/09/25 4:33	27,1 KB
R2-154057.zip	2015/09/25 4:30	155,2 KB
R2-154058.zip	2015/09/25 4:30	179,8 KB
R2-154059.zip	2015/09/25 4:31	23,6 KB
R2-154060.zip	2015/09/25 4:32	22,9 KB
R2-154061.zip	2015/09/25 4:34	24,4 KB
R2-154062.zip	2015/09/25 4:34	26,6 KB
R2-154063.zip	2015/09/25 4:35	23,8 KB
R2-154064.zip	2015/09/25 4:36	279,2 KB
R2-154065.zip	2015/09/25 8:50	113,5 KB
R2-154066.zip	2015/09/25 8:50	61,2 KB
R2-154067.zip	2015/09/25 8:36	21,5 KB
R2-154068.zip	2015/09/25 8:50	434,7 KB
R2-154069.zip	2015/09/25 8:50	148,9 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154070.zip	2015/09/25 8:50	183,8 KB
R2-154071.zip	2015/09/25 8:50	28,1 KB
R2-154072.zip	2015/09/26 5:47	168,6 KB
R2-154073.zip	2015/09/26 5:52	15 KB
R2-154074.zip	2015/09/26 5:56	13,9 KB
R2-154075.zip	2015/09/26 6:01	92,6 KB
R2-154077.zip	2015/09/24 8:19	12,9 KB
R2-154078.zip	2015/09/24 8:19	18,6 KB
R2-154079.zip	2015/09/25 14:54	85,7 KB
R2-154080.zip	2015/09/25 14:54	52,4 KB
R2-154081.zip	2015/09/25 14:54	15,8 KB
R2-154082.zip	2015/09/25 14:54	148,2 KB
R2-154083.zip	2015/09/25 15:13	34,9 KB
R2-154084.zip	2015/09/25 15:13	79,5 KB
R2-154085.zip	2015/09/25 15:13	10,5 KB
R2-154086.zip	2015/09/23 11:56	57,3 KB
R2-154087.zip	2015/09/23 11:56	22 KB
R2-154088.zip	2015/09/23 11:56	499,4 KB
R2-154089.zip	2015/09/23 11:56	268,6 KB
R2-154090.zip	2015/09/23 11:56	80,8 KB
R2-154091.zip	2015/09/25 22:00	81,1 KB
R2-154092.zip	2015/09/29 20:12	40,9 KB
R2-154093.zip	2015/09/26 6:59	43,3 KB
R2-154094.zip	2015/09/26 6:59	49,6 KB
R2-154095.zip	2015/09/26 7:38	88,4 KB
R2-154096.zip	2015/09/26 7:10	33,8 KB
R2-154098.zip	2015/09/25 21:13	21,4 KB
R2-154099.zip	2015/09/25 21:29	10,5 KB
R2-154100.zip	2015/09/25 21:34	9,3 KB
R2-154101.zip	2015/09/25 21:40	10,6 KB
R2-154102.zip	2015/09/25 21:40	10,6 KB
R2-154103.zip	2015/09/25 21:53	142,8 KB
R2-154104.zip	2015/09/26 3:19	30,2 KB
R2-154105.zip	2015/09/26 3:19	31,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-154109.zip	2015/09/26 6:34	29,3 KB
R2-154110.zip	2015/09/26 6:34	33,8 KB
R2-154111.zip	2015/09/25 8:03	17,4 KB
R2-154115.zip	2015/09/25 8:59	33,9 KB
R2-154116.zip	2015/09/25 8:59	57,3 KB
R2-154117.zip	2015/09/25 8:59	46,1 KB
R2-154118.zip	2015/09/26 5:47	54,1 KB
R2-154119.zip	2015/09/26 5:47	35,7 KB
R2-154120.zip	2015/09/26 5:10	62,6 KB
R2-154121.zip	2015/09/26 3:59	81,2 KB
R2-154122.zip	2015/09/26 3:08	112,2 KB
R2-154123.zip	2015/09/26 2:55	202,1 KB
R2-154124.zip	2015/09/25 12:16	65,9 KB
R2-154125.zip	2015/09/25 12:16	85,9 KB
R2-154126.zip	2015/09/25 12:16	59,6 KB
R2-154127.zip	2015/09/25 12:15	113,4 KB
R2-154128.zip	2015/09/24 2:40	22 KB
R2-154129.zip	2015/09/24 2:41	22,2 KB
R2-154130.zip	2015/09/25 9:52	68,8 KB
R2-154131.zip	2015/09/25 9:52	38,3 KB
R2-154133.zip	2015/09/25 9:52	18,4 KB
R2-154134.zip	2015/09/25 9:52	46,4 KB
R2-154135.zip	2015/09/25 6:29	108,3 KB
R2-154137.zip	2015/09/25 6:29	17,4 KB
R2-154138.zip	2015/09/25 9:52	21,6 KB
R2-154140.zip	2015/09/25 6:29	33,7 KB
R2-154141.zip	2015/09/25 6:30	22,8 KB
R2-154142.zip	2015/09/25 6:30	121,2 KB
R2-154143.zip	2015/09/25 6:30	67,8 KB
R2-154144.zip	2015/09/25 8:03	157,4 KB
R2-154145.zip	2015/09/25 3:10	18,5 KB
R2-154146.zip	2015/09/25 8:03	38 KB
R2-154147.zip	2015/09/25 8:48	138,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-154150.zip	2015/09/26 4:51	23,6 KB
R2-154151.zip	2015/09/26 4:51	24,2 KB
R2-154152.zip	2015/09/26 4:51	20,7 KB
R2-154153.zip	2015/09/26 4:51	26,1 KB
R2-154154.zip	2015/09/26 4:51	46,5 KB
R2-154155.zip	2015/09/26 4:51	33,6 KB
R2-154156.zip	2015/09/26 6:31	134,2 KB
R2-154157.zip	2015/09/26 4:51	36,9 KB
R2-154158.zip	2015/09/26 4:51	84,6 KB
R2-154159.zip	2015/09/26 4:51	19,9 KB
R2-154160.zip	2015/09/26 4:51	25,6 KB
R2-154161.zip	2015/09/26 4:51	42,7 KB
R2-154162.zip	2015/09/26 4:51	1176,8 KB
R2-154163.zip	2015/09/26 4:51	22,7 KB
R2-154164.zip	2015/09/25 8:15	66,2 KB
R2-154165.zip	2015/09/26 6:48	89,2 KB
R2-154166.zip	2015/09/25 9:52	70,6 KB
R2-154167.zip	2015/09/25 9:52	65,1 KB
R2-154168.zip	2015/09/25 9:52	43 KB
R2-154169.zip	2015/09/30 6:42	22,3 KB
R2-154170.zip	2015/09/30 6:47	26,7 KB
R2-154171.zip	2015/09/25 7:33	20 KB
R2-154172.zip	2015/09/25 9:52	93,7 KB
R2-154173.zip	2015/09/25 7:33	19,6 KB
R2-154174.zip	2015/09/30 6:42	18,9 KB
R2-154175.zip	2015/09/25 9:52	24,7 KB
R2-154176.zip	2015/09/25 9:52	17,8 KB
R2-154177.zip	2015/09/25 9:52	18 KB
R2-154178.zip	2015/09/25 9:52	18 KB
R2-154179.zip	2015/09/25 9:52	18 KB
R2-154180.zip	2015/09/25 3:12	51 KB
R2-154181.zip	2015/09/25 8:54	18,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-154183.zip	2015/09/25 8:54	20,6 KB
R2-154184.zip	2015/09/25 8:03	13,8 KB
R2-154185.zip	2015/09/25 14:57	32,3 KB
R2-154186.zip	2015/09/25 11:41	15 KB
R2-154187.zip	2015/09/25 11:41	15,2 KB
R2-154188.zip	2015/09/25 11:18	22,4 KB
R2-154189.zip	2015/09/25 11:18	38,2 KB
R2-154190.zip	2015/09/25 11:18	20,8 KB
R2-154191.zip	2015/09/26 4:02	92,8 KB
R2-154192.zip	2015/09/26 4:02	108,1 KB
R2-154193.zip	2015/09/26 4:02	119,7 KB
R2-154194.zip	2015/09/26 4:02	312,6 KB
R2-154195.zip	2015/10/08 6:10	129,6 KB
R2-154196.zip	2015/10/01 14:49	110 KB
R2-154197.zip	2015/09/26 4:02	93,4 KB
R2-154198.zip	2015/09/26 4:02	30 KB
R2-154199.zip	2015/09/26 4:02	145,1 KB
R2-154201.zip	2015/09/26 4:02	962,6 KB
R2-154202.zip	2015/09/25 11:18	20,8 KB
R2-154203.zip	2015/09/26 6:14	46,2 KB
R2-154204.zip	2015/09/26 6:15	15,8 KB
R2-154205.zip	2015/09/26 6:15	26,9 KB
R2-154206.zip	2015/09/26 6:15	108,9 KB
R2-154207.zip	2015/09/26 6:16	25,6 KB
R2-154208.zip	2015/09/26 6:16	15,5 KB
R2-154209.zip	2015/09/26 6:16	169,9 KB
R2-154210.zip	2015/09/25 11:18	18,8 KB
R2-154211.zip	2015/09/25 11:41	30,7 KB
R2-154212.zip	2015/09/25 11:41	19,7 KB
R2-154213.zip	2015/09/25 11:18	603,8 KB
R2-154214.zip	2015/09/25 11:17	18,5 KB
R2-154215.zip	2015/09/25 11:17	42,6 KB
R2-154216.zip	2015/09/25 11:17	150,3 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154217.zip	2015/09/25 11:17	42,9 KB
R2-154218.zip	2015/09/25 11:17	17,7 KB
R2-154219.zip	2015/09/25 11:17	114,4 KB
R2-154220.zip	2015/09/25 11:17	213,2 KB
R2-154221.zip	2015/09/25 11:17	126 KB
R2-154222.zip	2015/09/25 11:17	173,5 KB
R2-154223.zip	2015/09/25 11:17	54 KB
R2-154224.zip	2015/09/25 11:16	68,9 KB
R2-154226.zip	2015/09/25 11:16	67,7 KB
R2-154227.zip	2015/09/25 11:16	63,2 KB
R2-154228.zip	2015/09/25 11:16	27 KB
R2-154229.zip	2015/09/25 11:16	36,8 KB
R2-154230.zip	2015/09/25 11:16	74,1 KB
R2-154231.zip	2015/09/25 11:16	26,1 KB
R2-154232.zip	2015/09/25 11:15	75,5 KB
R2-154233.zip	2015/09/25 11:15	47,1 KB
R2-154234.zip	2015/09/25 11:15	47 KB
R2-154235.zip	2015/09/25 11:14	74,1 KB
R2-154236.zip	2015/09/25 11:14	39,5 KB
R2-154237.zip	2015/09/25 11:14	37,2 KB
R2-154238.zip	2015/09/25 11:14	20,6 KB
R2-154239.zip	2015/09/25 11:14	64,5 KB
R2-154240.zip	2015/09/25 15:04	42,6 KB
R2-154241.zip	2015/09/25 7:44	34,6 KB
R2-154242.zip	2015/09/25 7:45	108,5 KB
R2-154243.zip	2015/09/25 7:46	33,2 KB
R2-154244.zip	2015/09/25 9:31	76,5 KB
R2-154245.zip	2015/09/26 0:58	37,6 KB
R2-154246.zip	2015/09/25 9:31	34,1 KB
R2-154247.zip	2015/09/25 9:31	33 KB
R2-154248.zip	2015/09/26 0:58	19,3 KB
R2-154249.zip	2015/10/01 6:42	79,7 KB
R2-154250.zip	2015/10/01 6:42	38,5 KB
R2-154251.zip	2015/09/25 15:04	159,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154252.zip	2015/09/25 15:04	17 KB
R2-154253.zip	2015/09/25 15:04	15,5 KB
R2-154254.zip	2015/09/25 15:04	31,4 KB
R2-154255.zip	2015/09/25 15:04	24 KB
R2-154256.zip	2015/09/25 15:04	26,9 KB
R2-154257.zip	2015/09/25 15:04	14,8 KB
R2-154258.zip	2015/09/25 15:04	20,2 KB
R2-154259.zip	2015/09/25 19:05	350,5 KB
R2-154260.zip	2015/09/26 0:58	165,1 KB
R2-154261.zip	2015/09/26 0:58	16,8 KB
R2-154262.zip	2015/09/26 1:16	222,8 KB
R2-154263.zip	2015/09/26 0:58	195,5 KB
R2-154264.zip	2015/09/25 14:56	30,8 KB
R2-154265.zip	2015/09/26 3:18	178,1 KB
R2-154266.zip	2015/09/26 3:18	109,7 KB
R2-154267.zip	2015/09/26 3:19	205,9 KB
R2-154268.zip	2015/09/26 3:19	191 KB
R2-154269.zip	2015/09/25 14:57	32,3 KB
R2-154270.zip	2015/09/25 15:15	74 KB
R2-154271.zip	2015/09/26 3:36	18,9 KB
R2-154272.zip	2015/09/26 3:36	26,3 KB
R2-154273.zip	2015/09/26 3:36	17,4 KB
R2-154274.zip	2015/09/26 3:36	22,9 KB
R2-154275.zip	2015/09/26 3:36	76,7 KB
R2-154276.zip	2015/09/26 3:36	116,1 KB
R2-154277.zip	2015/09/26 6:04	13,6 KB
R2-154278.zip	2015/09/24 23:50	119,7 KB
R2-154279.zip	2015/09/24 23:50	168,8 KB
R2-154280.zip	2015/09/25 21:21	7 KB
R2-154281.zip	2015/09/25 21:21	13,9 KB
R2-154282.zip	2015/09/25 21:15	17,1 KB
R2-154283.zip	2015/09/25 21:15	30,4 KB
R2-154284.zip	2015/09/25 21:15	31,7 KB
R2-154285.zip	2015/09/25 21:15	31,3 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154286.zip	2015/09/25 21:21	5,2 KB
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R2-154288.zip	2015/09/26 3:01	23,7 KB
R2-154289.zip	2015/09/26 3:01	31,4 KB
R2-154290.zip	2015/09/26 3:01	22,6 KB
R2-154291.zip	2015/09/26 3:01	89,8 KB
R2-154292.zip	2015/09/26 3:01	97,7 KB
R2-154293.zip	2015/09/26 3:51	283,3 KB
R2-154294.zip	2015/10/02 10:09	67,4 KB
R2-154295.zip	2015/09/26 3:59	110,5 KB
R2-154296.zip	2015/09/26 4:56	65,7 KB
R2-154297.zip	2015/09/26 3:01	20,3 KB
R2-154298.zip	2015/09/26 3:01	23,4 KB
R2-154299.zip	2015/09/26 3:01	18,6 KB
R2-154300.zip	2015/09/25 15:46	27 KB
R2-154301.zip	2015/09/25 15:46	27,5 KB
R2-154302.zip	2015/09/25 0:11	19,7 KB
R2-154303.zip	2015/09/26 2:38	611,1 KB
R2-154304.zip	2015/09/26 2:38	1238,3 KB
R2-154305.zip	2015/09/26 3:10	33,6 KB
R2-154306.zip	2015/09/25 11:55	157,4 KB
R2-154307.zip	2015/09/25 8:40	26,1 KB
R2-154308.zip	2015/09/25 8:40	1679,7 KB
R2-154309.zip	2015/09/25 8:40	25,6 KB
R2-154310.zip	2015/09/25 8:40	210,4 KB
R2-154311.zip	2015/09/25 13:01	126,4 KB
R2-154312.zip	2015/09/26 3:49	110,9 KB
R2-154313.zip	2015/09/25 1:37	30 KB
R2-154314.zip	2015/09/25 2:15	33,4 KB
R2-154315.zip	2015/09/25 2:15	99,6 KB
R2-154316.zip	2015/09/25 2:15	134,9 KB
R2-154317.zip	2015/09/26 2:34	81,2 KB
R2-154318.zip	2015/09/26 2:34	58,4 KB
R2-154319.zip	2015/09/26 2:34	53 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154320.zip	2015/09/26 2:34	35,8 KB
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R2-154322.zip	2015/09/26 2:46	26,6 KB
R2-154323.zip	2015/09/25 8:12	264,1 KB
R2-154324.zip	2015/09/26 2:46	26,2 KB
R2-154325.zip	2015/09/26 2:46	25,7 KB
R2-154326.zip	2015/09/25 3:12	36,1 KB
R2-154327.zip	2015/09/25 3:12	22 KB
R2-154328.zip	2015/09/25 3:12	88,5 KB
R2-154329.zip	2015/09/25 3:12	26,4 KB
R2-154330.zip	2015/09/25 3:13	21,6 KB
R2-154331.zip	2015/09/25 3:13	21,9 KB
R2-154332.zip	2015/09/25 3:13	24,4 KB
R2-154333.zip	2015/09/25 3:13	21,3 KB
R2-154334.zip	2015/09/25 3:13	20,8 KB
R2-154335.zip	2015/09/25 3:13	52,3 KB
R2-154336.zip	2015/09/26 2:54	59,7 KB
R2-154337.zip	2015/09/26 2:54	81,4 KB
R2-154338.zip	2015/09/26 2:54	52,1 KB
R2-154339.zip	2015/09/26 2:54	240 KB
R2-154340.zip	2015/09/26 2:54	35,3 KB
R2-154341.zip	2015/09/26 2:55	86,6 KB
R2-154342.zip	2015/09/26 2:55	180,2 KB
R2-154343.zip	2015/09/26 2:55	51,3 KB
R2-154344.zip	2015/09/26 2:55	223,6 KB
R2-154345.zip	2015/09/25 6:33	51,1 KB
R2-154346.zip	2015/09/25 6:33	22,8 KB
R2-154347.zip	2015/09/25 6:33	69,7 KB
R2-154348.zip	2015/09/25 6:33	31,9 KB
R2-154349.zip	2015/09/25 6:33	24,7 KB
R2-154350.zip	2015/09/25 6:33	31,4 KB
R2-154351.zip	2015/09/25 6:33	21,4 KB
R2-154352.zip	2015/09/25 6:33	25,1 KB
R2-154353.zip	2015/09/25 6:33	32 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154354.zip	2015/09/25 6:33	22,6 KB
R2-154355.zip	2015/09/25 6:33	25,1 KB
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R2-154357.zip	2015/09/26 3:40	40,2 KB
R2-154358.zip	2015/09/26 3:40	35,6 KB
R2-154359.zip	2015/09/26 4:28	36,2 KB
R2-154360.zip	2015/09/26 3:40	128,6 KB
R2-154361.zip	2015/09/26 3:40	41,4 KB
R2-154362.zip	2015/09/25 3:43	47,4 KB
R2-154363.zip	2015/09/25 6:37	47,5 KB
R2-154364.zip	2015/09/25 8:03	10,8 KB
R2-154365.zip	2015/09/26 4:44	28,9 KB
R2-154369.zip	2015/09/25 7:30	53,4 KB
R2-154370.zip	2015/09/25 6:28	213 KB
R2-154371.zip	2015/09/25 6:29	146,7 KB
R2-154372.zip	2015/09/26 2:06	33,8 KB
R2-154373.zip	2015/09/26 2:06	286,9 KB
R2-154374.zip	2015/09/26 1:32	54,1 KB
R2-154375.zip	2015/09/25 5:45	16,2 KB
R2-154376.zip	2015/09/25 8:11	191,5 KB
R2-154377.zip	2015/09/25 8:39	3547,2 KB
R2-154378.zip	2015/09/26 3:01	243 KB
R2-154379.zip	2015/09/26 5:45	63,5 KB
R2-154380.zip	2015/09/26 3:01	120,5 KB
R2-154381.zip	2015/09/26 3:01	193,4 KB
R2-154382.zip	2015/09/26 3:01	149,7 KB
R2-154383.zip	2015/09/26 3:01	17,9 KB
R2-154384.zip	2015/09/26 3:01	16,3 KB
R2-154385.zip	2015/09/26 3:01	125,5 KB
R2-154386.zip	2015/09/26 4:56	42,7 KB
R2-154387.zip	2015/09/26 3:01	110,5 KB
R2-154388.zip	2015/09/30 6:11	35,7 KB
R2-154389.zip	2015/09/30 6:11	28,1 KB
R2-154390.zip	2015/09/30 6:11	34,6 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154391.zip	2015/09/30 6:11	51,1 KB
R2-154392.zip	2015/09/26 3:01	133 KB
R2-154393.zip	2015/09/26 3:01	250,4 KB
R2-154394.zip	2015/09/26 3:01	63,6 KB
R2-154395.zip	2015/09/26 3:01	57,1 KB
R2-154396.zip	2015/09/25 8:39	65,1 KB
R2-154397.zip	2015/09/25 8:39	30,8 KB
R2-154398.zip	2015/09/26 7:14	96,4 KB
R2-154399.zip	2015/09/25 8:11	44,9 KB
R2-154400.zip	2015/09/25 8:11	42,5 KB
R2-154401.zip	2015/09/25 8:39	133,8 KB
R2-154402.zip	2015/09/25 6:33	48,1 KB
R2-154403.zip	2015/09/25 6:30	856,1 KB
R2-154404.zip	2015/09/25 14:50	116,9 KB
R2-154405.zip	2015/09/26 7:14	296,8 KB
R2-154406.zip	2015/09/26 7:14	43 KB
R2-154407.zip	2015/09/25 6:18	33,4 KB
R2-154408.zip	2015/09/26 7:14	182,7 KB
R2-154409.zip	2015/09/25 6:18	99,7 KB
R2-154410.zip	2015/09/25 6:18	134,8 KB
R2-154411.zip	2015/09/25 8:34	447,3 KB
R2-154412.zip	2015/09/25 6:39	17,8 KB
R2-154413.zip	2015/09/25 6:37	46,2 KB
R2-154414.zip	2015/09/25 7:33	74,5 KB
R2-154415.zip	2015/09/25 6:40	17,3 KB
R2-154416.zip	2015/09/25 7:42	89 KB
R2-154417.zip	2015/09/25 6:41	48 KB
R2-154418.zip	2015/09/25 6:37	76 KB
R2-154419.zip	2015/09/25 7:40	71 KB
R2-154420.zip	2015/09/25 7:40	29,8 KB
R2-154421.zip	2015/09/25 11:56	26,5 KB
R2-154422.zip	2015/09/25 11:56	26,5 KB
R2-154423.zip	2015/09/25 7:40	106,1 KB
R2-154424.zip	2015/09/30 4:26	31,3 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154425.zip	2015/09/25 7:40	66 KB
R2-154426.zip	2015/09/25 6:50	103,7 KB
R2-154427.zip	2015/09/25 9:07	132 KB
R2-154428.zip	2015/09/25 7:40	69,8 KB
R2-154429.zip	2015/09/25 6:50	498,4 KB
R2-154430.zip	2015/09/25 7:41	47,2 KB
R2-154431.zip	2015/09/25 7:41	60,2 KB
R2-154432.zip	2015/09/25 6:50	77,3 KB
R2-154433.zip	2015/09/25 7:41	25,7 KB
R2-154434.zip	2015/09/25 7:59	20,7 KB
R2-154435.zip	2015/09/25 7:41	55,5 KB
R2-154436.zip	2015/09/25 7:59	16,2 KB
R2-154437.zip	2015/09/25 7:59	55 KB
R2-154438.zip	2015/09/25 7:41	45,1 KB
R2-154439.zip	2015/09/25 9:08	18,5 KB
R2-154440.zip	2015/09/28 14:55	54,7 KB
R2-154441.zip	2015/09/25 8:06	25,8 KB
R2-154442.zip	2015/09/25 7:41	28,4 KB
R2-154443.zip	2015/09/25 8:06	25 KB
R2-154444.zip	2015/09/25 8:06	79 KB
R2-154445.zip	2015/09/26 5:20	51,6 KB
R2-154446.zip	2015/09/25 7:41	41,7 KB
R2-154447.zip	2015/09/25 8:06	24,5 KB
R2-154448.zip	2015/09/25 8:06	24,4 KB
R2-154449.zip	2015/09/30 6:49	201,9 KB
R2-154451.zip	2015/09/26 5:19	50,8 KB
R2-154452.zip	2015/09/30 6:49	120,7 KB
R2-154453.zip	2015/09/30 5:10	141,8 KB
R2-154454.zip	2015/09/30 6:56	36,1 KB
R2-154455.zip	2015/09/25 23:20	27,9 KB
R2-154456.zip	2015/09/25 9:13	23,1 KB
R2-154457.zip	2015/09/25 10:53	88,7 KB
R2-154458.zip	2015/09/25 10:53	17 KB
R2-154459.zip	2015/09/25 9:13	27,1 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154460.zip	2015/09/25 9:13	27,8 KB
R2-154461.zip	2015/09/25 9:13	29 KB
R2-154462.zip	2015/09/30 4:26	633,7 KB
R2-154463.zip	2015/09/25 12:26	40,4 KB
R2-154464.zip	2015/09/25 12:26	74,4 KB
R2-154465.zip	2015/09/25 12:26	40,6 KB
R2-154466.zip	2015/09/25 12:26	79,5 KB
R2-154467.zip	2015/09/25 7:42	92,3 KB
R2-154468.zip	2015/09/25 7:41	32,3 KB
R2-154469.zip	2015/09/25 8:26	35,6 KB
R2-154470.zip	2015/09/25 8:26	34,7 KB
R2-154471.zip	2015/09/25 8:26	38,1 KB
R2-154472.zip	2015/09/25 16:20	8,5 KB
R2-154473.zip	2015/09/25 8:26	35 KB
R2-154474.zip	2015/09/25 8:26	69,2 KB
R2-154475.zip	2015/09/25 8:26	79,6 KB
R2-154476.zip	2015/09/25 9:05	38,8 KB
R2-154477.zip	2015/09/30 6:37	21,9 KB
R2-154478.zip	2015/09/30 6:38	24 KB
R2-154479.zip	2015/09/25 13:41	139,8 KB
R2-154480.zip	2015/09/25 13:40	11,9 KB
R2-154485.zip	2015/09/25 13:42	16,3 KB
R2-154486.zip	2015/09/25 13:41	11,2 KB
R2-154487.zip	2015/09/25 13:38	18,2 KB
R2-154491.zip	2015/09/25 9:07	18,7 KB
R2-154492.zip	2015/09/25 8:25	48,1 KB
R2-154493.zip	2015/09/25 13:40	61,9 KB
R2-154494.zip	2015/09/25 13:40	33 KB
R2-154495.zip	2015/09/25 13:39	20,5 KB
R2-154496.zip	2015/09/25 13:39	30,2 KB
R2-154497.zip	2015/09/25 13:38	16,2 KB
R2-154498.zip	2015/09/25 13:37	17,7 KB
R2-154499.zip	2015/09/25 13:38	25,4 KB
R2-154500.zip	2015/09/25 9:57	31,5 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154501.zip	2015/09/25 8:47	20 KB
R2-154502.zip	2015/09/25 15:39	18,4 KB
R2-154503.zip	2015/09/26 4:41	18,7 KB
R2-154504.zip	2015/09/30 3:31	27,9 KB
R2-154505.zip	2015/09/30 3:31	24 KB
R2-154507.zip	2015/09/30 3:31	490,9 KB
R2-154508.zip	2015/09/30 3:31	23,8 KB
R2-154509.zip	2015/09/30 3:31	63 KB
R2-154510.zip	2015/09/30 3:34	22,5 KB
R2-154511.zip	2015/09/30 3:34	22,5 KB
R2-154512.zip	2015/09/30 3:34	23,3 KB
R2-154513.zip	2015/09/30 3:34	24,1 KB
R2-154514.zip	2015/09/29 20:08	122,6 KB
R2-154515.zip	2015/09/29 20:08	23,8 KB
R2-154516.zip	2015/09/29 20:08	30,2 KB
R2-154517.zip	2015/09/29 20:08	26,3 KB
R2-154518.zip	2015/09/29 20:09	72,4 KB
R2-154519.zip	2015/09/29 20:09	21,1 KB
R2-154520.zip	2015/09/29 20:09	23,5 KB
R2-154521.zip	2015/09/26 4:41	18,6 KB
R2-154522.zip	2015/09/25 15:39	64,9 KB
R2-154523.zip	2015/09/26 4:41	19 KB
R2-154524.zip	2015/09/26 4:26	17,8 KB
R2-154525.zip	2015/09/26 4:26	17,6 KB
R2-154526.zip	2015/09/26 4:26	17,6 KB
R2-154527.zip	2015/09/30 6:42	57,7 KB
R2-154528.zip	2015/09/30 6:42	43,2 KB
R2-154529.zip	2015/09/30 6:42	84,4 KB
R2-154530.zip	2015/09/30 6:42	275 KB
R2-154531.zip	2015/09/30 6:42	100,7 KB
R2-154532.zip	2015/09/30 6:42	84 KB
R2-154533.zip	2015/09/25 10:07	177,5 KB
R2-154534.zip	2015/09/25 13:26	29,3 KB
R2-154535.zip	2015/09/26 6:45	67,4 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154536.zip	2015/09/25 15:40	17,3 KB
R2-154537.zip	2015/09/25 15:41	63,8 KB
R2-154538.zip	2015/09/25 11:21	32,7 KB
R2-154539.zip	2015/09/25 11:21	17,5 KB
R2-154540.zip	2015/09/25 11:27	25,1 KB
R2-154541.zip	2015/09/26 5:23	28 KB
R2-154542.zip	2015/09/26 5:23	234,3 KB
R2-154543.zip	2015/09/26 5:54	40,9 KB
R2-154544.zip	2015/09/26 5:23	46,7 KB
R2-154545.zip	2015/09/26 5:54	82,7 KB
R2-154546.zip	2015/09/26 5:53	101,2 KB
R2-154547.zip	2015/09/26 5:54	91,5 KB
R2-154548.zip	2015/09/26 5:54	84,8 KB
R2-154549.zip	2015/09/26 6:44	26,4 KB
R2-154550.zip	2015/09/25 13:11	21,8 KB
R2-154551.zip	2015/09/26 2:11	99,4 KB
R2-154552.zip	2015/09/25 13:11	316,6 KB
R2-154553.zip	2015/09/26 2:12	25,2 KB
R2-154554.zip	2015/09/26 3:32	28,5 KB
R2-154555.zip	2015/09/25 13:11	21,2 KB
R2-154556.zip	2015/09/25 13:11	19,3 KB
R2-154557.zip	2015/09/25 13:11	18,1 KB
R2-154558.zip	2015/09/25 13:11	15,3 KB
R2-154559.zip	2015/09/25 13:11	15,2 KB
R2-154560.zip	2015/09/25 12:17	66,2 KB
R2-154561.zip	2015/09/25 13:11	18,8 KB
R2-154562.zip	2015/09/25 13:41	20,6 KB
R2-154563.zip	2015/09/26 4:39	187,1 KB
R2-154564.zip	2015/09/25 13:14	82,6 KB
R2-154565.zip	2015/09/26 12:32	70,2 KB
R2-154566.zip	2015/09/25 13:14	30,5 KB
R2-154567.zip	2015/09/26 12:32	329,7 KB
R2-154568.zip	2015/09/29 14:54	13,6 KB
R2-154569.zip	2015/09/26 12:32	34 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154570.zip	2015/10/01 6:42	14,4 KB
R2-154571.zip	2015/09/26 12:32	31,7 KB
R2-154572.zip	2015/09/26 12:32	29,1 KB
R2-154573.zip	2015/09/26 12:32	32,4 KB
R2-154574.zip	2015/09/26 12:32	0,1 KB
R2-154575.zip	2015/09/26 12:32	29,8 KB
R2-154576.zip	2015/09/26 12:32	29,6 KB
R2-154577.zip	2015/09/26 12:32	29,3 KB
R2-154578.zip	2015/09/25 13:14	59,6 KB
R2-154579.zip	2015/09/25 13:14	56,1 KB
R2-154580.zip	2015/09/26 12:32	36 KB
R2-154581.zip	2015/09/25 13:14	337,2 KB
R2-154582.zip	2015/09/25 16:06	23,1 KB
R2-154583.zip	2015/09/25 16:07	26,1 KB
R2-154584.zip	2015/09/25 16:07	24,7 KB
R2-154585.zip	2015/09/26 2:53	66,1 KB
R2-154587.zip	2015/09/25 16:07	88,1 KB
R2-154588.zip	2015/09/26 2:54	38,4 KB
R2-154589.zip	2015/09/26 2:54	35,9 KB
R2-154590.zip	2015/09/25 16:06	28,6 KB
R2-154591.zip	2015/09/26 2:55	166,6 KB
R2-154592.zip	2015/09/25 19:32	10 KB
R2-154593.zip	2015/09/25 19:32	37,5 KB
R2-154594.zip	2015/09/25 19:32	11,9 KB
R2-154595.zip	2015/09/26 2:55	105 KB
R2-154596.zip	2015/09/26 2:55	23,3 KB
R2-154597.zip	2015/09/26 2:56	90,9 KB
R2-154598.zip	2015/09/25 14:01	20,9 KB
R2-154599.zip	2015/09/26 7:14	82,9 KB
R2-154600.zip	2015/09/25 15:12	655,2 KB
R2-154601.zip	2015/09/25 15:12	30,9 KB
R2-154602.zip	2015/09/25 15:12	599,2 KB
R2-154603.zip	2015/09/25 15:12	29,6 KB
R2-154604.zip	2015/09/25 15:12	48,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154605.zip	2015/09/25 15:12	22,6 KB
R2-154606.zip	2015/09/25 15:12	366,5 KB
R2-154607.zip	2015/09/25 15:12	22,4 KB
R2-154608.zip	2015/09/25 15:12	403,9 KB
R2-154609.zip	2015/09/26 6:02	21,9 KB
R2-154611.zip	2015/09/26 5:59	2331,2 KB
R2-154612.zip	2015/09/26 5:59	67,4 KB
R2-154613.zip	2015/09/26 5:59	308,1 KB
R2-154614.zip	2015/09/26 5:59	566,9 KB
R2-154615.zip	2015/09/28 6:40	36 KB
R2-154616.zip	2015/09/26 6:02	24,1 KB
R2-154617.zip	2015/09/25 14:54	35,9 KB
R2-154618.zip	2015/10/01 9:07	164,2 KB
R2-154619.zip	2015/10/01 9:07	50 KB
R2-154620.zip	2015/09/25 20:39	16,7 KB
R2-154621.zip	2015/09/26 5:20	34,8 KB
R2-154622.zip	2015/09/26 5:20	46,2 KB
R2-154623.zip	2015/09/26 5:20	94,1 KB
R2-154624.zip	2015/10/01 9:07	50,5 KB
R2-154625.zip	2015/09/25 20:39	17,1 KB
R2-154626.zip	2015/10/01 9:07	213,7 KB
R2-154627.zip	2015/09/25 20:39	17,1 KB
R2-154628.zip	2015/09/25 20:39	19,3 KB
R2-154629.zip	2015/09/25 19:56	76,5 KB
R2-154630.zip	2015/09/25 19:56	31,9 KB
R2-154631.zip	2015/09/25 19:56	57,3 KB
R2-154632.zip	2015/09/25 19:56	21,1 KB
R2-154633.zip	2015/09/25 19:56	23,8 KB
R2-154634.zip	2015/09/25 19:56	21,1 KB
R2-154635.zip	2015/09/25 19:56	22,8 KB
R2-154636.zip	2015/09/25 19:56	110,6 KB
R2-154637.zip	2015/09/25 19:56	22,4 KB
R2-154638.zip	2015/09/25 19:56	19 KB
R2-154639.zip	2015/09/25 19:57	67,8 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154640.zip	2015/09/25 19:57	22,2 KB
R2-154641.zip	2015/09/25 19:57	66 KB
R2-154642.zip	2015/09/25 19:57	51,4 KB
R2-154643.zip	2015/09/25 19:57	16,2 KB
R2-154644.zip	2015/09/25 19:57	78,5 KB
R2-154645.zip	2015/09/25 19:57	19,8 KB
R2-154646.zip	2015/09/25 19:57	18,9 KB
R2-154647.zip	2015/09/25 20:39	22,6 KB
R2-154648.zip	2015/09/25 20:39	27,6 KB
R2-154649.zip	2015/09/25 20:39	30,2 KB
R2-154650.zip	2015/09/25 21:00	29 KB
R2-154651.zip	2015/09/25 20:39	685,9 KB
R2-154652.zip	2015/09/25 21:03	75,8 KB
R2-154654.zip	2015/09/25 16:26	202,1 KB
R2-154655.zip	2015/09/25 20:39	24,8 KB
R2-154656.zip	2015/09/25 16:26	49,4 KB
R2-154657.zip	2015/09/26 6:44	447,3 KB
R2-154658.zip	2015/09/25 16:26	88,8 KB
R2-154659.zip	2015/09/26 7:59	37,4 KB
R2-154660.zip	2015/09/26 6:44	28,4 KB
R2-154661.zip	2015/09/26 7:59	38,3 KB
R2-154662.zip	2015/09/25 16:26	54,6 KB
R2-154663.zip	2015/09/26 6:44	179,3 KB
R2-154664.zip	2015/09/26 3:01	26,7 KB
R2-154665.zip	2015/09/26 4:56	32,8 KB
R2-154666.zip	2015/09/26 3:01	48,4 KB
R2-154667.zip	2015/09/25 23:17	172,4 KB
R2-154668.zip	2015/09/25 23:18	23,5 KB
R2-154669.zip	2015/09/25 23:24	24,5 KB
R2-154670.zip	2015/09/25 23:25	87,2 KB
R2-154671.zip	2015/09/25 23:27	17,7 KB
R2-154672.zip	2015/09/25 23:28	16,1 KB
R2-154673.zip	2015/09/25 23:30	86,9 KB
R2-154674.zip	2015/09/25 23:31	196,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R2-154675.zip	2015/09/25 23:32	846 KB
R2-154676.zip	2015/09/25 23:33	107,7 KB
R2-154677.zip	2015/09/26 0:19	53 KB
R2-154678.zip	2015/09/26 0:19	345,7 KB
R2-154679.zip	2015/09/26 0:19	35,1 KB
R2-154680.zip	2015/09/26 0:19	111 KB
R2-154681.zip	2015/09/26 3:00	38,3 KB
R2-154682.zip	2015/09/25 19:20	49,5 KB
R2-154683.zip	2015/09/26 0:19	42,6 KB
R2-154684.zip	2015/09/26 6:02	191,6 KB
R2-154685.zip	2015/09/26 0:20	22,9 KB
R2-154686.zip	2015/09/25 19:20	29,2 KB
R2-154687.zip	2015/09/25 17:20	21,9 KB
R2-154688.zip	2015/09/26 0:20	74,8 KB
R2-154689.zip	2015/09/25 19:10	24,2 KB
R2-154690.zip	2015/09/26 0:20	1308,3 KB
R2-154691.zip	2015/09/25 17:20	18,5 KB
R2-154692.zip	2015/09/26 0:20	40,8 KB
R2-154693.zip	2015/09/26 0:20	24,1 KB
R2-154694.zip	2015/09/26 0:20	36,8 KB
R2-154695.zip	2015/09/25 23:47	180,7 KB
R2-154696.zip	2015/09/25 23:48	808,8 KB
R2-154697.zip	2015/09/25 23:48	55,7 KB
R2-154698.zip	2015/09/25 23:48	187 KB
R2-154699.zip	2015/09/26 1:08	149,4 KB
R2-154700.zip	2015/09/26 1:08	216,8 KB
R2-154701.zip	2015/09/26 1:08	90,6 KB
R2-154702.zip	2015/09/26 0:20	32,1 KB
R2-154703.zip	2015/09/25 17:20	31,9 KB
R2-154704.zip	2015/09/25 17:20	20 KB
R2-154705.zip	2015/09/26 3:01	189,2 KB
R2-154706.zip	2015/09/25 17:50	255 KB
R2-154707.zip	2015/09/26 3:03	48,1 KB
R2-154708.zip	2015/09/26 3:20	58,5 KB

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Samsung Electronics Co., Ltd. v. Asus Technology Licensing Inc.
IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-154709.zip	2015/09/25 17:50	62 KB
R2-154710.zip	2015/09/26 3:34	93,2 KB
R2-154711.zip	2015/09/26 6:48	84,7 KB
R2-154712.zip	2015/09/26 15:41	24,3 KB
R2-154713.zip	2015/09/25 21:00	95,6 KB
R2-154714.zip	2015/09/25 20:59	31,9 KB
R2-154715.zip	2015/09/25 20:08	68,4 KB
R2-154716.zip	2015/09/25 20:08	46,4 KB
R2-154717.zip	2015/09/25 18:55	51,1 KB
R2-154718.zip	2015/09/25 18:55	51,6 KB
R2-154719.zip	2015/09/25 18:55	56,2 KB
R2-154720.zip	2015/09/28 15:15	38,4 KB
R2-154721.zip	2015/09/26 5:28	50,2 KB
R2-154722.zip	2015/09/29 14:43	240,1 KB
R2-154723.zip	2015/09/26 5:29	85,8 KB
R2-154724.zip	2015/09/26 5:12	26,7 KB
R2-154725.zip	2015/09/28 8:32	46,9 KB
R2-154726.zip	2015/09/30 5:40	27 KB
R2-154727.zip	2015/09/26 5:12	23,1 KB
R2-154728.zip	2015/09/26 6:34	9 KB
R2-154729.zip	2015/09/29 7:14	23,8 KB
R2-154730.zip	2015/09/26 5:12	28,8 KB
R2-154731.zip	2015/09/26 5:13	21,2 KB
R2-154732.zip	2015/09/26 5:13	39,3 KB
R2-154733.zip	2015/09/26 5:43	241,1 KB
R2-154734.zip	2015/09/26 5:43	81,3 KB
R2-154735.zip	2015/09/26 5:43	65,3 KB
R2-154736.zip	2015/09/26 5:43	51 KB
R2-154737.zip	2015/09/26 5:13	41,8 KB
R2-154738.zip	2015/09/26 5:41	43,4 KB
R2-154739.zip	2015/09/25 20:53	18 KB
R2-154740.zip	2015/09/26 0:39	61,5 KB
R2-154741.zip	2015/09/25 23:24	19,5 KB
R2-154742.zip	2015/09/25 23:24	75,6 KB

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Samsung Electronics Co., Ltd. v. Asus Technology Licensing Inc.
IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-154743.zip	2015/10/01 14:49	2926,2 KB
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R2-154745.zip	2015/09/25 22:31	16,3 KB
R2-154746.zip	2015/09/25 22:31	34,4 KB
R2-154747.zip	2015/09/25 22:31	30,4 KB
R2-154748.zip	2015/09/25 21:12	12,2 KB
R2-154749.zip	2015/09/25 22:17	25,5 KB
R2-154750.zip	2015/09/25 22:17	26 KB
R2-154751.zip	2015/09/25 22:17	27,2 KB
R2-154752.zip	2015/09/25 21:32	26,9 KB
R2-154753.zip	2015/09/26 5:09	241,3 KB
R2-154754.zip	2015/09/25 22:48	16,7 KB
R2-154755.zip	2015/09/26 5:09	96,1 KB
R2-154756.zip	2015/09/26 5:09	233,6 KB
R2-154757.zip	2015/09/26 1:11	156,8 KB
R2-154758.zip	2015/09/25 22:17	19,6 KB
R2-154759.zip	2015/09/25 22:17	59,9 KB
R2-154760.zip	2015/09/26 1:09	40,4 KB
R2-154761.zip	2015/09/26 0:33	67,9 KB
R2-154762.zip	2015/09/26 0:38	199,2 KB
R2-154763.zip	2015/09/26 0:39	117,2 KB
R2-154764.zip	2015/09/26 0:39	78,5 KB
R2-154765.zip	2015/09/26 0:40	102 KB
R2-154766.zip	2015/09/26 0:41	216,5 KB
R2-154767.zip	2015/09/26 0:42	17,2 KB
R2-154768.zip	2015/09/26 0:42	16,8 KB
R2-154769.zip	2015/09/26 0:43	111 KB
R2-154770.zip	2015/09/25 23:36	37,7 KB
R2-154771.zip	2015/09/26 3:03	21,6 KB
R2-154772.zip	2015/09/30 5:53	10,3 KB
R2-154773.zip	2015/09/26 3:03	24,3 KB
R2-154774.zip	2015/09/30 5:53	58,2 KB
R2-154775.zip	2015/09/26 3:03	113,3 KB
R2-154776.zip	2015/09/25 23:16	23,8 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-154777.zip	2015/09/25 23:10	27,1 KB
R2-154778.zip	2015/09/25 23:10	32,7 KB
R2-154779.zip	2015/09/25 23:09	17,4 KB
R2-154780.zip	2015/09/25 23:11	15,7 KB
R2-154781.zip	2015/09/25 22:00	277,2 KB
R2-154782.zip	2015/09/25 22:57	39,3 KB
R2-154783.zip	2015/09/25 22:57	39,9 KB
R2-154784.zip	2015/10/01 14:49	55,1 KB
R2-154785.zip	2015/09/25 23:42	70,1 KB
R2-154786.zip	2015/09/25 23:42	193,8 KB
R2-154787.zip	2015/09/25 23:42	64,3 KB
R2-154788.zip	2015/09/25 23:42	144,3 KB
R2-154789.zip	2015/09/25 23:42	62 KB
R2-154790.zip	2015/09/25 23:42	29,9 KB
R2-154793.zip	2015/10/09 15:32	80,8 KB
R2-154794.zip	2015/09/25 23:22	119,1 KB
R2-154795.zip	2015/09/25 23:22	96,2 KB
R2-154796.zip	2015/09/26 1:15	55,4 KB
R2-154797.zip	2015/09/30 3:14	32 KB
R2-154798.zip	2015/09/26 1:15	44,4 KB
R2-154799.zip	2015/09/26 1:15	45 KB
R2-154800.zip	2015/09/26 1:15	92,2 KB
R2-154801.zip	2015/09/29 21:47	40,8 KB
R2-154802.zip	2015/09/29 21:47	43,4 KB
R2-154803.zip	2015/09/26 0:57	61 KB
R2-154804.zip	2015/09/26 0:57	18,8 KB
R2-154805.zip	2015/09/26 0:57	20,5 KB
R2-154806.zip	2015/09/26 0:57	85,8 KB
R2-154807.zip	2015/09/26 0:57	14,4 KB
R2-154808.zip	2015/09/26 0:57	58,2 KB
R2-154809.zip	2015/09/26 3:18	68 KB
R2-154810.zip	2015/09/26 3:18	74,6 KB
R2-154811.zip	2015/09/26 1:19	14,9 KB
R2-154812.zip	2015/09/26 3:01	80,8 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
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R2-154816.zip	2015/09/26 1:55	86,2 KB
R2-154817.zip	2015/09/26 3:01	555,7 KB
R2-154818.zip	2015/09/26 3:03	21,7 KB
R2-154819.zip	2015/09/26 5:33	68,9 KB
R2-154820.zip	2015/10/08 6:10	264,7 KB
R2-154821.zip	2015/09/26 3:27	26,3 KB
R2-154824.zip	2015/09/26 3:27	29,3 KB
R2-154825.zip	2015/09/26 3:27	48,6 KB
R2-154826.zip	2015/09/26 3:27	27,3 KB
R2-154827.zip	2015/09/26 3:06	99,8 KB
R2-154828.zip	2015/09/26 3:27	24,8 KB
R2-154829.zip	2015/09/26 3:27	26,4 KB
R2-154830.zip	2015/09/26 3:27	36,4 KB
R2-154831.zip	2015/09/26 3:19	30 KB
R2-154832.zip	2015/09/26 3:18	48,1 KB
R2-154833.zip	2015/09/30 6:11	113,1 KB
R2-154834.zip	2015/09/26 4:36	18,9 KB
R2-154835.zip	2015/09/26 4:38	24,4 KB
R2-154836.zip	2015/09/26 3:59	22,9 KB
R2-154837.zip	2015/09/26 3:49	29,9 KB
R2-154838.zip	2015/09/26 3:52	189,6 KB
R2-154839.zip	2015/09/26 4:10	35,9 KB
R2-154840.zip	2015/09/26 4:14	30,1 KB
R2-154841.zip	2015/09/26 4:10	34,7 KB
R2-154842.zip	2015/09/26 5:29	18,9 KB
R2-154843.zip	2015/09/26 5:29	15,7 KB
R2-154844.zip	2015/09/26 6:07	21,8 KB
R2-154845.zip	2015/09/26 6:23	85,7 KB
R2-154846.zip	2015/09/26 6:26	169 KB
R2-154847.zip	2015/09/26 6:57	27,3 KB
R2-154848.zip	2015/09/26 6:26	21,6 KB

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Samsung Electronics Co., Ltd. v. Asus Technology Licensing Inc.
IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-154849.zip	2015/09/26 6:25	37,3 KB
R2-154850.zip	2015/09/26 6:25	35,4 KB
R2-154851.zip	2015/09/26 6:25	37,2 KB
R2-154852.zip	2015/09/26 6:26	41,5 KB
R2-154853.zip	2015/09/30 5:41	33,4 KB
R2-154854.zip	2015/09/30 5:40	36,3 KB
R2-154855.zip	2015/09/30 5:41	55,4 KB
R2-154857.zip	2015/09/26 6:16	65 KB
R2-154858.zip	2015/09/26 6:24	33,7 KB
R2-154859.zip	2015/09/26 6:50	17,8 KB
R2-154860.zip	2015/09/26 6:50	318,5 KB
R2-154861.zip	2015/09/26 6:50	49,7 KB
R2-154862.zip	2015/09/26 6:50	91,3 KB
R2-154863.zip	2015/09/26 7:00	22,5 KB
R2-154864.zip	2015/09/26 7:00	15,4 KB
R2-154865.zip	2015/09/26 7:00	45,9 KB
R2-154866.zip	2015/09/30 7:02	89,8 KB
R2-154867.zip	2015/09/30 7:02	28,6 KB
R2-154868.zip	2015/10/05 9:53	64,4 KB
R2-154869.zip	2015/09/30 7:02	31,8 KB
R2-154870.zip	2015/10/02 10:09	63,2 KB
R2-154871.zip	2015/09/30 8:46	30,5 KB
R2-154872.zip	2015/09/30 8:46	23,2 KB
R2-154873.zip	2015/09/28 12:24	30,9 KB
R2-154874.zip	2015/09/28 12:24	29,6 KB
R2-154875.zip	2015/09/28 12:24	22,7 KB
R2-154876.zip	2015/09/28 12:24	22,3 KB
R2-154877.zip	2015/09/30 8:46	34,7 KB
R2-154878.zip	2015/09/30 8:46	59,4 KB
R2-154879.zip	2015/09/29 11:38	81,1 KB
R2-154880.zip	2015/09/29 9:12	61,2 KB
R2-154881.zip	2015/09/30 8:46	145 KB
R2-154882.zip	2015/10/01 6:43	47,2 KB
R2-154883.zip	2015/10/01 6:43	29,7 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-154884.zip	2015/10/01 14:49	9,1 KB
R2-154885.zip	2015/10/01 14:49	21,8 KB
R2-154886.zip	2015/10/02 7:00	33,2 KB
R2-154887.zip	2015/10/02 10:09	330,7 KB
R2-154888.zip	2015/10/02 13:15	81,9 KB
R2-154889.zip	2015/10/08 6:10	19,7 KB
R2-154890.zip	2015/10/09 15:32	50,9 KB
R2-154891.zip	2015/10/09 15:32	310,5 KB
R2-154892.zip	2015/10/09 15:32	176,6 KB
R2-154893.zip	2015/10/09 15:32	206,4 KB
R2-154894.zip	2015/10/05 6:35	39,2 KB
R2-154895.zip	2015/10/05 6:35	80,3 KB
R2-154896.zip	2015/10/08 6:10	20,6 KB
R2-154897.zip	2015/10/08 6:10	9,5 KB
R2-154898.zip	2015/10/08 6:10	45,7 KB
R2-154899.zip	2015/10/17 8:03	155,5 KB
R2-154900.zip	2015/10/26 15:53	20,2 KB
R2-154901.zip	2015/10/20 15:07	607,5 KB
R2-154902.zip	2015/10/09 15:32	130,6 KB
R2-154903.zip	2015/10/09 15:32	53 KB
R2-154904.zip	2015/10/09 15:32	20,2 KB
R2-154905.zip	2015/10/09 15:32	113,1 KB
R2-154906.zip	2015/10/09 15:32	38,2 KB
R2-154907.zip	2015/10/09 15:32	24,7 KB
R2-154909.zip	2015/10/09 15:32	14,4 KB
R2-154910.zip	2015/10/09 15:32	1141,4 KB
R2-154911.zip	2015/10/09 15:32	38,3 KB
R2-154912.zip	2015/10/09 15:32	601,6 KB
R2-154913.zip	2015/10/09 15:32	601,7 KB
R2-154914.zip	2015/10/09 15:32	14,6 KB
R2-154915.zip	2015/10/09 15:32	24,3 KB
R2-154916.zip	2015/10/09 15:32	9 KB
R2-154917.zip	2015/10/09 15:32	13,4 KB
R2-154918.zip	2015/10/09 15:33	56,8 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
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R2-154920.zip	2015/10/20 15:04	22,6 KB
R2-154921.zip	2015/10/09 15:33	32,6 KB
R2-154922.zip	2015/10/09 15:33	17,7 KB
R2-154923.zip	2015/10/09 15:33	20 KB
R2-154924.zip	2015/10/09 15:33	10,7 KB
R2-154925.zip	2015/10/09 15:33	14,6 KB
R2-154926.zip	2015/10/09 15:33	14,8 KB
R2-154927.zip	2015/10/09 15:33	23,9 KB
R2-154928.zip	2015/10/09 15:33	601,6 KB
R2-154929.zip	2015/10/22 19:14	2797,8 KB
R2-154930.zip	2015/10/22 19:14	3853,4 KB
R2-154931.zip	2015/10/09 15:33	9,3 KB
R2-154932.zip	2015/10/09 15:33	10,8 KB
R2-154933.zip	2015/10/11 8:29	8,7 KB
R2-154934.zip	2015/10/09 15:33	10,9 KB
R2-154935.zip	2015/10/19 9:12	638,7 KB
R2-154936.zip	2015/10/08 6:10	5,4 KB
R2-154937.zip	2015/10/08 6:10	23 KB
R2-154938.zip	2015/10/09 15:33	16,3 KB
R2-154939.zip	2015/10/09 15:33	29,5 KB
R2-154940.zip	2015/10/09 15:33	11,2 KB
R2-154941.zip	2015/10/09 15:33	12 KB
R2-154942.zip	2015/10/09 15:33	11,2 KB
R2-154943.zip	2015/10/09 15:33	12 KB
R2-154944.zip	2015/10/09 15:33	11,3 KB
R2-154945.zip	2015/10/09 15:33	11,3 KB
R2-154946.zip	2015/10/09 15:33	21,6 KB
R2-154947.zip	2015/10/09 15:33	18,8 KB
R2-154948.zip	2015/10/09 15:33	18,8 KB
R2-154949.zip	2015/10/22 19:14	18,3 KB
R2-154950.zip	2015/10/09 15:33	18,4 KB
R2-154951.zip	2015/10/09 15:33	11,3 KB
R2-154952.zip	2015/10/09 15:33	11,8 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R2-154956.zip	2015/10/09 15:33	9,8 KB
R2-154957.zip	2015/10/08 6:10	44,7 KB
R2-154958.zip	2015/10/09 15:33	15,4 KB
R2-154959.zip	2015/10/09 15:33	167,7 KB
R2-154960.zip	2015/10/09 15:33	81,9 KB
R2-154961.zip	2015/10/08 6:10	68,5 KB
R2-154962.zip	2015/10/08 6:10	52,4 KB
R2-154963.zip	2015/10/09 15:33	13,9 KB
R2-154964.zip	2015/10/09 15:33	36,5 KB
R2-154965.zip	2015/10/08 6:10	38 KB
R2-154966.zip	2015/10/11 8:29	27,3 KB
R2-154967.zip	2015/10/08 6:10	8,9 KB
R2-154968.zip	2015/10/09 15:33	30 KB
R2-154969.zip	2015/10/09 15:33	29,4 KB
R2-154970.zip	2015/10/09 15:33	17,9 KB
R2-154971.zip	2015/10/13 16:28	17,2 KB
R2-154972.zip	2015/10/11 8:29	17,4 KB
R2-154973.zip	2015/10/09 15:33	35,6 KB
R2-154974.zip	2015/10/09 15:33	26,8 KB
R2-154975.zip	2015/10/09 15:33	20,6 KB
R2-154976.zip	2015/10/09 15:33	18,8 KB
R2-154977.zip	2015/10/08 6:10	121,1 KB
R2-154978.zip	2015/10/09 15:33	22,6 KB
R2-154979.zip	2015/10/09 15:33	23,5 KB
R2-154980.zip	2015/10/09 15:33	74,3 KB
R2-154981.zip	2015/10/09 15:33	70,9 KB
R2-154982.zip	2015/10/09 15:33	23,4 KB
R2-154983.zip	2015/10/09 15:33	13,9 KB
R2-154984.zip	2015/10/09 15:33	79,4 KB
R2-154985.zip	2015/10/09 15:33	33,4 KB
R2-154986.zip	2015/10/09 15:33	24,4 KB
R2-154987.zip	2015/10/09 15:33	58,6 KB

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IPR2024-00614

sort by name/desc	sort by date/desc	sort by size/desc
R2-154988.zip	2015/10/09 15:33	648,1 KB
R2-154989.zip	2015/10/09 15:33	58,7 KB
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R2-154992.zip	2015/10/09 15:33	10,2 KB
R2-154993.zip	2015/10/09 15:33	11,3 KB
R2-154994.zip	2015/10/09 15:33	11,1 KB
R2-154995.zip	2015/10/09 15:33	20,6 KB
R2-154996.zip	2015/10/09 15:33	15,4 KB
R2-154997.zip	2015/10/19 9:21	626,6 KB
R2-154998.zip	2015/10/09 15:33	13,4 KB
R2-154999.zip	2015/10/09 15:33	11,5 KB
R2-155000.zip	2015/10/09 15:33	11,3 KB
R2-155001.zip	2015/10/09 15:33	10,2 KB
R2-155002.zip	2015/10/26 11:00	437,4 KB
R2-155003.zip	2015/10/11 8:29	18,2 KB
R2-155004.zip	2015/10/09 15:33	17,8 KB
R2-155005.zip	2015/10/09 15:33	9,6 KB
R2-155006.zip	2015/10/09 15:33	13,9 KB
R2-155007.zip	2015/10/26 11:10	35,3 KB
R2-155008.zip	2015/10/26 10:46	3822,2 KB
R2-155009.zip	2015/10/26 15:53	35,1 KB
TDoc_List_Meeting_RAN2#91-BIS.xlsm	2016/11/14 0:27	295,3 KB
TDoc_List_Meeting_RAN2#91-BIS.xlsx	2017/10/19 7:12	288,2 KB
TDoc_List_Meeting_RAN2#91-BIS.zip	2018/01/10 16:47	547,5 KB

973 items.

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Appendix 25



3GPP_TSG_RAN_WG2 Archives

November 2015, Week 1

3GPP_TSG_RAN_WG2@LIST.ETSI.ORG



Options: Use Monospaced Font
Show Text Part by Default
Show All Mail Headers

Message: [<< First] [< Prev] [Next >] [Last >>]
Topic: [<< First] [< Prev] [Next >] [Last >>]
Author: [<< First] [< Prev] [Next >] [Last >>]

Subject: Draft Report of 3GPP TSG RAN WG2 meeting #91bis in Malmo, Sweden for comment



From: Yong-jun Chung <[log in to unmask]>
Reply To: Yong-jun Chung <[log in to unmask]>
Date: Fri, 6 Nov 2015 09:31:31 +0000
Content-Type: multipart/alternative
Parts/Attachments: text/plain (513 bytes) , text/html (5 kB)

Dear all,

The draft Report of 3GPP TSG RAN WG2 meeting #91bis (Malmo), version 1.0 and associated annexes are now available **in R2-156002** for your comment
on the FTP server at: ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_91bis/Report

Please provide me with any comments and corrections, by **18 November 2015**, so that I can incorporate them and submit the report for approval at RAN2#92 in Anaheim.

Best regards,
Yong-Jun

_____
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[log in to unmask]

ATOM RSS1 RSS2

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Appendix 26

Agenda Item: 2.2

Source: ETSI MCC

Title: Draft Report of 3GPP TSG RAN WG2 meeting #91bis,
Malmö, Sweden, October 5 – 10, 2015

Document for: Approval

Draft Report of 3GPP TSG RAN WG2 meeting #91bis

held in Malmö, Sweden
October 5 - 10, 2015

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Organisation of the meeting

Meeting:	3GPP TSG RAN WG2 #91bis	
Meeting location:	Malmö, Sweden	
Duration:	Monday 5.10.2015 - Friday 9.10.2015	
Host:	European Friends of 3GPP (EF3)	
TSG RAN WG2 Chairman:	Richard Burbidge (Intel Corporation)	email: richard.c.burbidge@intel.com
TSG RAN WG2 Vice chairman:	Hu Nan (CMCC)	email: hunan@chinamobile.com
TSG RAN WG2 Vice chairman:	Diana Pani (Interdigital Communications)	email: diana.pani@interdigital.com
TSG RAN WG2 MCC Support:	Yong-Jun Chung (ETSI MCC)	email: Yong-jun.Chung@etsi.org
Email reflector:	3GPP_TSG_RAN_WG2@LIST.ETSI.ORG	
Technical documents:	ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_91bis/Docs	
Ad hocs:	Official parallel ad hocs held (see agenda item 2.1) on LTE Breakout session on UP matter chaired by SeungJune Yi (LGE), LTE Breakout session on ProSe, eDRX, V2X, and Latency reduction chaired by chaired by Diana (Interdigital), LTE Breakout session on MCLD, MDT and SC-PTM chaired by Hu Nan (CMCC), LTE Breakout session on NB-IoT chaired by Johan Johansson (MediaTek) UMTS sessions: Topics on UMTS legacy Rel-12 and earlier, DL enhancements WI, Dual Band HSUPA, Dual Carrier HSUPA enhancements, and TEI13 chaired by Diana Pani (Interdigital); Topic on Power saving enhancements for UMTS chaired by Francesco Pica (Qualcomm); Topics on Support of EVS over UTRAN CS and Study on Network-Assisted Interference Cancellation and Suppression for UMTS and DL TPC enhancements chaired by Mark Curran (Ericsson); Topics on ACDC and Indoor positioning chaired by Xudong Yang (Huawei).	
next meetings:	TSG RAN WG2 #92	16.11. - 20.11.2015 Anahaim, USA
	TSG RAN #70	07.12. - 10.12.2015 Sitges, Spain
	TSG RAN WG2 NB-IoT Ad hoc	19.01. - 21.01.2015 TBD, EU
	TSG RAN WG2 #93	15.02. - 19.02.2015 Malta
	TSG RAN #71	07.03. - 10.03.2015 Goteborg, Sweden
	TSG RAN WG2 #93bis	11.04. - 15.04.2015 Dubrovnik, Croatia
	TSG RAN WG2 #94	23.05. - 27.05.2015 TBD, China
	TSG RAN #72	13.06. - 16.06.2015 TBD, South Korea
	TSG RAN WG2 #95	22.08. - 26.08.2015 Goteborg, Sweden
	TSG RAN #73	19.09. - 22.09.2015 TBD, USA

Statistics/Executive Summary

TSG RAN WG2 #91bis was held in Malmö, Sweden hosted by the European Friends of 3GPP (EF3). This RAN WG2 meeting had 2 parallel sessions: UMTS session (see AI 8-11; Mon - Thu) and LTE Breakout sessions on (see AI 6.1.2, 6.2.1.2, 6.2.3.2, 6.2.9.2 and 7.2.3 in R2-154890 (Annex G), AI 7.5, 7.9, 7.10 and 7.11 in R2-154891 (Annex H), AI 7.3, 7.7 and 7.13 in R2-154892 (Annex I), AI 7.16 in R2-154893 (Annex J). All other topics were treated in the parallel main session.

- 204 participants (registered before the meeting: 265 participants).
- 1007 Tdocs allocated with 970 available contributions.
- 29 incoming liaison statements (2 on UTRA, 25 on LTE; and 2 on joint aspects): 28 of them were treated then noted and 1 of them was received during the meeting then not treated.
- 27 outgoing liaison statements (4 on UTRA, 23 on LTE; and 0 on joint aspects), 2 of them agreed by email.
- 55 email discussions scheduled after RAN2 #91bis, see Annex F.
- In this bis meeting only the type draftCRs were treated. A mong 207 change requests (CRs) in total: 46 CRs (13 CRs for UTRA 25.xxx specs, 33 CRs for LTE 36.xxx specs, 0 CRs for joint 37.xxx specs) were agreed in principle (14 of 46 are implicitly in principle agreed). They will be (re)submitted to RAN2 #92 for final agreement.

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1 Opening of the meeting

TSG RAN WG2 chairman Richard Burbidge (Intel Corporation) opened the meeting RAN WG2 #91bis on Monday morning 20.04.2015 at 09:00 o'clock.

On behalf of the host, the European Friends of 3GPP, Mr. Berggren Anders (Sony) welcomed the delegates to Malmö, Sweden and explained organisational issues.

RAN WG2 meeting rooms in the Clarion Hotel & Congress Malmö Live and Scandic Triangeln hotel*:

Main RAN2 room:	Live 1 + 2 (Level 1),	planned for 220 chairs, Mon-Fri
RAN2 LTE Breakout sessions room:	High live 4 (Level 2),	planned for 110 participants, Mon - Thu
RAN2 UMTS ad hoc room:	Live 4 (Level 1),	planned for 35 participants, Mon - Thu

* Only NB-IoT session was assigned in Scandic Triangeln hotel.

RAN2 LTE Breakout NB-IoT sessions:	Ballroom CD (3rd floor),	planned for 80 participants, Tue - Thu

1.1 Call for IPR

Richard Burbidge (TSG RAN WG2 chairman) made the following call for IPRs and reminded the delegates of their obligations with respect to IPRs:

> The attention of the delegates of this Working Group is drawn to the fact that **3GPP Individual Members have the obligation** under the IPR Policies of their respective Organizational Partners to **inform their respective Organizational Partners of Essential IPRs they become aware of**.
>
> The delegates were asked to take note that they were hereby invited:
>
> - to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.
> - to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Statement and the Licensing declaration forms (http://webapp.etsi.org/Ipr/).

NOTE: IPRs may be declared to the Director-General or Chairman of the SDO, but not to the RAN WG2 Chairmen.

1.2 Network usage conditions

The PCG has laid down the following network usage conditions that were shortly presented by the RAN2 chairman:

> 1. **Users shall not use the network to engage in illegal activities. This includes activities such as copyright violation, hacking, espionage or any other activity that may be prohibited by local laws**.
>
> 2. **Users shall not engage in non-work related activities that consume excessive bandwidth** or cause significant degradation of the performance of the network.
>
> Since the **network is a shared resource**, users should exercise some basic etiquette when using the 3GPP network at a meeting. It is understood that high bandwidth applications such as downloading large files or video streaming might be required for business purposes, but delegates should be strongly discouraged in performing these activities for personal use. Downloading a movie or doing something in an interactive environment for personal use essentially wastes bandwidth that others need to make the meeting effective. The meeting chairman should remind end users that the network is a shared resource; the more one user

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grabs, the less there is for another. Email and its attachments already take up significant bandwidth (certain email programs are not very bandwidth efficient). In case of need the chair can ask the delegates to restrict IT usage to things that are essential for the meeting itself.

1. **DON'T place your WiFi device in ad-hoc mode**
2. **DON'T set up a personal hotspot in the meeting room**
3. **DO try 802.11a if your WiFi device supports it**
4. **DON'T manually allocate an IP address**
5. **DON'T be a bandwidth hog by streaming video, playing online games, or downloading huge files**
6. **DON'T use packet probing software which clogs the local network (e.g., packet sniffers or port scanners)**

1.3 Other

The PCG has laid down the following conditions that were shortly presented by the RAN2 chairman:

In accordance with the Working Procedures it is reaffirmed that:

(i) compliance with all applicable antitrust and competition laws is required;

(ii) timely submissions of work items in advance of TSG or WG meetings are important to allow for full and fair consideration of such matters; and

(iii) the chairman will conduct the meeting with strict impartiality and in the interests of 3GPP

Note on (i): In case of question please contact your legal counsel.

Note on (ii): WIDs don't need to be submitted to the RAN2 meeting and will typically not be discussed here either.

2 General

RAN WG2 chairman: THANK YOU to companies that request TDoc numbers and submit contributions early before deadline (really appreciated). Will start to refrain from treating late documents.

2.1 Approval of the agenda

R2-154001 Proposed agenda for RAN2 #91bis Malmö, Sweden, 5.10.-9.10.2015 Intel (RAN2 Chairman)
agenda
=> Approved

Time-schedule is only indicative (i.e. topics might move forward/backward!):

Schedule	Main room	LTE Breakout room	UMTS room	NB-IoT room
Mon 09:00 -> 13:00	[2],[3],[4]			
10:30 ->	[5.1] ACDC [5.2] [5.3]			
14:00 ->	[6, other than UP items] Legacy LTE	[6.1.2] [6.2.1.2] [6.2.1.2] [6.2.3.2] [6.2.9.2] Legacy LTE user plane [7.2.3] CA enh user plane aspects	[8] UMTS Rel-8/9/10 [9] UMTS Rel-11 [10] Rel-12 [11.1] DL enh. [11.10] Dual carrier HSUPA enhancements	
16:30 ->				
Tuesday				
08:30 ->	[6, other than UP items] Legacy LTE	*(continuation of user plane from Monday, if needed)*	[11.1] DL enh.	
11:00 ->				*(may start earlier, after legacy*

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	(start Wed agenda if time allows)			*completed in the main room)*
14:30 ->	[7.14] Indoor positioning	[7.3] SC-PTM		[7.16.1] General
17:00 ->	[7.6] LWA	[7.10] LATRED	[11.7] ACDC	[7.16.2.1] System Info
Wednesday				
08:30 ->	[7.8] DC enh	[7.9] eDRX	[11.2] Power saving enh.	
11:00 ->	[7.2] CA enh	[7.11] V2X [0.5] [7.5] ProSe-enh	[11.3] EVS over UTRAN CS	[7.16.2.2] Paging [7.16.2.3] Other CP
14:30 ->	[7.1] LAA	[7.5] ProSe-enh	[11.4] NAICS [11.9] DL TPC enhancements	
17:00 ->	[7.1] LAA [7.12] MIMO [0.5]	[7.5] ProSe-enh [0.5]	[11.8] Indoor positioning	
Thursday				
08:30 ->	[7.4] MTCe	[7.7] MCLD	[11.6] Dual Band HSUPA [11.11] UMTS TEI13 Comebacks	
11:00 ->	[7.4] MTCe	[7.13] MDT		
14:30 ->	[7.15] LTE/WLAN integration for legacy AP	[7.5] ProSe-enh		[7.16.3.2] User plane [7.16.3.1]Random access
17:00 ->	[7.6] LWA [0.5] [7.18] TEI13 [0.5]			
Friday				
08:30 -> until 17:00	Left-overs, Comebacks including Joint LTE/UMTS			

Chairing of LTE Sessions:

Legacy LTE user lane and CA enhancements user plane session chaired by SeungJune Yi (LGE)

: AI 6.1.2, 6.2.1.2, 6.2.3.2, 6.2.9.2 and 7.2.3

ProSe, eDRX, V2X, and Latency reduction chaired by Vice Chair Diana Pani (Interdigital)

: AI 7.5, 7.9, 7.10 and 7.11

MCLD, MDT and SC-PTM will be chaired by Vice Chair Hu Nan (CMCC)

: AI 7.3, 7.7 and 7.13

NB-IOT will be chaired by Johan Johansson (MediaTek)

: AI 7.16

Chairing of UTMS Sessions

Diana Pani (Interdigital): UMTS legacy Rel-12 and earlier, DL enhancements WI, Dual Band HSUPA, Dual Carrier HSUPA enhancements, and UMTS TEI13

Francesco Pica (Qualcomm): Power saving enhancements for UMTS

Mark Curran (Ericsson): Support of EVS over UTRAN CS and Study on Network-Assisted Interference Cancellation and Suppression for UMTS and DL TPC enhancements

Xudong Yang (Huawei): ACDC and Indoor positioning

2.2 Approval of the report of the previous meeting

R2-154002 Draft report of RAN2 RAN2 #91, Beijing, China, 24.8 - 28.8.2015 ETSI MCC report
- Will be revised on Thursday
- comeback to approve

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R2-154031 Draft report of RAN2 RAN2 #91, Beijing, China, 24.8 - 28.8.2015 ETSI MCC report
=> Approved in R2-154032

2.3 Reporting from other meetings

RAN#69 agreed 4 WIs that affect RAN2.

- " Indoor Positioning Enhancements for UTRA and LTE "
  - o RAN2 led WI
  - o Completion Dec 2015
- " Further Enhancements of Minimization of Drive Tests for E-UTRAN "
  - o RAN2 led WI
  - o Completion Dec 2015
- " LTE-WLAN RAN Level Integration supporting legacy WLAN"
  - o RAN2 led WI
  - o Completion Dec 2015
- " Narrowband IOT"
  - o RAN1 led WI
  - o Completion March 2016
  - o Independent from Rel-13 time budget and consequently handled in additional parallel sessions

2.4 Others

Rapporteur changes

Spec	former rapporteur	proposed new rapporteur

None

Isolated impact analysis

Note that an isolated impact analysis is required for Rel-8 to Rel-12 CRs from Q2 2015 onwards.

Only corrections where there is a proven problem are allowed for frozen releases (Rel-8 to Rel-12).

RAN2 WG compendium

Latest version can always be found at ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Org/RAN2_Compendium/

R2-154003 3GPP TSG RAN WG2 compendium v29.0 (status after RAN #69) ETSI Secretariat other late
Not treated

Time Budget

The time budget endorsed at RAN-68 is available in RP-151600.

3 Incoming liaisons

Note: LSs are moved to the respective agenda items if any.

3.1 Joint UMTS/LTE relevance

R2-154019 LS on QoS for EVS-VBR Codec Operation (S4-151160; contact: Qualcomm) SA4 LS in to: RAN2 Rel-13 EVS_codec, QOSE2EMTSI
- Qualcomm clarified that it doesn't apply to UMTS.
=> Noted, see tdoc later.

R2-154027 LS on Draft CRs for Improved end-to-end QoS Enhancements for MTSI (S4-AHM315; contact: Ericsson) SA4 LS in to: RAN2 Rel-13 QOSE2EMTSI

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=> Noted

The following LSin:
- R2-154022 will be treated under AI 7.7

3.2 LTE relevance

R2-154012 LS on Pcell specification changes (R4-155397; contact: Vodafone) RAN4 LS in to: RAN2
- CR (R2-154889) from Vodafone to be seen later in the week.

=> Noted

R2-154014 LS on features with an FGI bit dependency from an earlier release (R5-154052; contact: Ericsson) RAN5 LS in to: RAN2 Rel-10
- Ericsson think for the first issue (eICIC) there is a coupling as understood by RAN5 is correct. More discussion may be needed for the second issue (MIMO)

=> Offline discussion hoe to response and whether CRs are required.
=> Draft LS response in R2-154956 (Ericsson)

R2-154956 Draft reply LS on features with an FGI bit dependency from an earlier release (to: RAN5; cc: RAN4; contact: Ericsson) Ericsson LS out
✓ => Approved in R2-155005

R2-154016 LS on MBMS_enh conclusions (S2-152964; contact: Samsung) SA2 LS in
cc: RAN2 Rel-13 MBMS_enh
- Nokia ask if there are additional requirements on eNB. Vodafone explain the list of cell IDs can be used to select the appropriate MBSFN.

=> Noted

R2-154018 Response LS to C1-152403 = R2-153004 on proposed method of restricting access to IOPS cells (S3-152097; contact: General Dynamics UK Limited) SA3 LS in
cc: RAN2 Rel-13 FS_IOPS_Sec
=> Noted

R2-154020 Reply LS R3-151316 = R2-153016 on RAN Sharing Enhancements for LTE (S5-154454; contact: Nokia Networks) SA5 LS in cc: RAN2 OAM13
=> Noted

R2-154021 LS on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (SP-150574; contact: Samsung) SALS in to: RAN2 Rel-13 ECSRA_LAA
=> Invite contributions for next meeting on how to respond to SA
=> Noted

R2-154025 LS on EB/FD-MIMO signalling (R1-154884; contact: Nokia Networks)RAN1 LS in
to: RAN2 Rel-13 LTE_EBF_FDMIMO-Core
=> Noted

R2-154029 LS on introduction of new TBS in Rel-12 (R1-156111; contact: NTT DOCOMO)RAN1 LS in
to: RAN2 Rel-12
late
- New incoming LS
- DCM plan to provide CRs to the next meeting.

=> Noted

In addition, the following LSin:
- R2-154028, R2-154898 treated under AI 7.1.1
- R2-154007, R2-154011 treated under AI 7.2.1
- R2-154026 treated under AI 7.4.1
- R2-154004, R2-154005, R2-154006, R2-154010, R2-154024 treated under AI 7.5
- R2-154017, R2-154023 treated under AI 7.6.1
- R2-154022 treated under AI 7.7
- R2-154009 treated under AI 7.8

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- R2-154008 treated under AI 7.11
- R2-154015 treated under AI 7.15

3.3 UMTS relevance

The following LSin:
- R2-154013 treated under AI 11.6
- R2-154897 treated under AI 11.9

4 Joint UMTS/LTE: Rel-12 and earlier releases

Contributions submitted under this agenda item will be handled in a joint UMTS/LTE session.

4.1 Joint UMTS/LTE: Rel-11 and earlier releases

(SIMTC-RAN_OC-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Sep. 12, WID: RP-111373)

(eMDT_UMTSLTE-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec.12, WID: RP-121204)

(SONenh2_LTE_UTRA-Core, leading WG: RAN3, REL-11, started: Sep.11, closed: Dec.12, WID: RP-120314)

(rSRVCC-GERAN, leading WG: GERAN2, REL-11, started: Sep.11, closed: Nov.13, WID: GP-111290)

Including corrections to joint LTE+UMTS TEI functionality in Rel-8 to 11. E.g. “Multiple Frequency Bands per Cell”, …

No contributions received.

4.2 Joint Rel-12 WIs/SIs

Input to any other Rel-12 Joint UMTS/LTE WIs/SIs not explicitly listed above.

(EHNB_enh3-Core, leading WG: RAN3, REL-12, started: Sep.12, **closed**: Dec 13, WID: RP-130741)

(MTCe_RAN-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Sep.14, WID: RP-132053)

(UTRA_LTE_WLAN_interw-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Sep.14, WID: RP-132101)

(LTE_UTRA_IncMon-Core, leading: RAN4, REL-12, started: Dec.13, **closed**: Dec. 14, WID: RP-132061)

R2-154682 UTRAN-to-EUTRAN HO transfer of UE EUTRA capabilities Alcatel-Lucent Telecom Ltd
discussion
- Nokia agree the problem exists but only in cases of legacy RACH/FACH. In enhanced RACH/FACH then the transfer is a few 100ms. If enhanced features are not deployed they prefer an approach where UTRA have more control over what UE would do in the situation. They have CR submitted to UMTS session.
- DT acknowledge the problem and would like a solution.
- Intel that the problem should be solved as soon as possible but if new UE requirements are added then it may only be in R12/13.
- ALU ask if Nokia approach would work with legacy UEs. Nokia think the answer depends on the solution.
- Vodafone not sure how severe this problem is.
- Qualcomm think a solution for later released is to request a subset of capabilities. Could be a solution for legacy UEs for UE to decide to send a subset. Prefer this to sending nothing at all. ALU think this doesn’t address legacy

=> UMTS session will discuss the documents from Nokia.
=> Discuss again Friday to determine final solution
- Offline discussion concluded that the issue exists and concluded another meeting is required.

=> Issue can be revisited next meeting

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R2-154686 Enabling UTRAN to E-UTRAN HO without forwarding UE-EUTRA-Capability Alcatel-Lucent Telecom Ltd draftCR 36.331 12.7.0 B Rel-12 TEI12
wrong spec ver number used in CR cover; it should be 12.7.0
Not treated

5 Joint UMTS/LTE: Rel-13

5.1 WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)

(ACDC-RAN-Core; leading WG: RAN2; REL-13; started: Mar. 15; target: Dec. 15; RP-150662)

Time budget: 0.25 TU

R2-154871 Proposed CR to 36.331 on introduction of ACDC in LTE LG Electronics Inc. draftCR 36.331 12.7.0 B Rel-13 ACDC-RAN
late
=> Can be updated later to take into account agreements from discussion.
=> Postponed

R2-154104 Open issues with ACDCNokia Networks discussion
=> Noted
P1
- Intel prefer a new SIB to not affect any legacy features. But to progress can accept SIB2.

P2
- LG paper analysed the number of bits and concluded ACB style parameters has less overhead.
- Ericsson think that bit map approach would satisfy the SA1 requirements.
- Vodafone support ACB approach. DT also support.
- China Mobile also think bitmap approach can address SA1 requirements.
- Intel think both approaches were discussion for LTE R8 and adopted the barring factor approach. Why is it different for ACDC.
- LG both solutions can satisfy the SA1 requirements. EAB approach doesn't have a barring time and so UE behaviour is more complex to design. For ACB style we can reuse what we have.
- Nokia think that EAB approach doesn't address the prioritisation aspect required by SA1.

P3
- LG think we will need a probability 1.0 but in CR it is achieved by absent of optional IE.

P4
- Intel think current value ranges are ok.

Agreements:
1: SIB2 to be used for ACDC parameters.
2: ACB type parameters for ACDC control (i.e. barring factor and barring time).
3: Must be possible for ACDC category to not be barred (details left to stage 3 CR - e.g. whether add probability 1.0 or by absent optional IE)
4: Keep existing CB barring time values. FFS whether to add additional values
5: For roaming UEs ACDC control parameters are the same (equal) as for home users.
6: For RAN sharing ACDC control parameters are provided individually per PLMN.
7: Whether the UE of a PLMN sharing the RAN shall apply ACDC is indicated by the presence or absence of the PLMN specific ACDC control parameters.

R2-154564 Remaining Issues on ACDC LG Electronics Inc. discussion
=> Noted
P6
- Intel - P6 looks okay but not sure it reflects the discussion in section 4. Thinks that MO signalling should not be impacted by ACDC barring. LG think we can just reply as per the proposal and CT1 can handled further details. LG: RRC will still act on a request that is not applicable to ACDC even if ACDC barring is currently active.

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- Qualcomm: Understand that once UE is configured for ACDC then all access requests are ACDC applicable but with different categories. Intel: Operator will configure which applications are applicable to ACDC but MO signalling is not related to an application.
- Huawei: From RRC point of view the UE AS should just follow the legacy procedure in this case.

Agreements:
1: When access to the cell is barred due to ACDC, RRC informs NAS that the access barring is applicable due to ACDC.
2: FFS whether AS will run an existing barring timer or a single new ACDC timer (i.e. no timer per category)
3: RRC informs NAS when the barring timer expires and barring is alleviated
4: If RRC receives a connection request from NAS while barring is ACDC applicable then it will act on that request according to existing specification. (Thus left to NAS to decide in which situations a request can be made).
5: Send LS to CT1 with information on agreement 1 - 4
6 For the ACDC category configured in the UE but with no corresponding ACDC barring information broadcast at a cell (i.e. unmatched ACDC category), UE RRC performs the ACDC barring check by using ACDC barring parameters corresponding to the lowest ACDC category in system information.

=> Some offline discussion regarding decision 2 with aim to have a clear agreement to provide to CT1 on Friday
=> LS to be draft to CT1 in R2-154958 to inform agreements 1-4 and any other agreements relevant to CT1 (LG)
✉ **=>** Email discussion to work on details of CR. Outcome is draft CR into next meeting. Rapporteur: LG

R2-154958 Draft LS on RAN2 agreements on ACDC (to: CT1; cc: -; contact: LGE) LGE LS out
=> Approved in R2-154996

R2-154141 Coexistence and notification issues of ACDC China Mobile Com. Corporation discussion
R2-154287 Discussion on remaining aspects of ACDC for LTE and UMTS Intel Corporation discussion
R2-154236 Discussion on open issues for ACDCHuawei, HiSilicon discussion
R2-154365 Remaining issues in ACDCHTC Corporation discussion
R2-154466 Handling of unmatched ACDC category NEC Corporation discussion
R2-154780 Signalling aspects of ACDC in E-UTRAN Ericsson discussion
Above 6 Tdocs not treated

Late:

R2-154570 Draft reply LS on ACDC mechanism LG Electronics Inc. LS out
late
Not treated

Withdrawn:
R2-154566 Proposed CR to 36.331 on introduction of ACDC in LTE LG Electronics Inc. CR 36.331 12.7.0 B Rel-13 ACDC-RAN

5.2 Other Joint Rel-13 WIs

No contributions received.

5.3 Joint LTE+UMTS TEI13 enhancements

Small Technical Enhancements affecting both LTE and UMTS Rel-13 that do not belong to any Rel-13 WI.

Note: A TEI enhancement proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

No contributions received.

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6 LTE: Rel-12 and earlier releases

6.1 LTE: Rel-11 and earlier

Corrections and Changes to functionality introduced in Rel-8, 9, 10 and 11!

(LTE-L23, leading WG: RAN2, REL-8, started: Sep. 06, closed: Dec. 08, WID: RP-080747)

(LTE_CA-Core, leading WG: RAN1, REL-10, started: Dec. 09, closed: June 11, WID: RP-100661)

(LTE_UL_MIMO-Core, leading WG: RAN1, REL-10, started: Dec.09, closed: June 11, WID: RP-100959)

(LTE_eDL_MIMO-Core, leading WG: RAN1, REL-10, started: Dec.09, closed: March 11, WID: RP-100196)

(LTE_Relay-Core, leading WG: RAN1, REL-10, started: Dec. 09, closed: June 11, WID: RP-110911)

(MBMS_LTE_enh-Core, leading WG: RAN2, REL-10, started: June 10, closed: March 11, WID: RP-101244)

(MDT_UMTSLTE-Core, leading WG: RAN2, REL-10, started: Dec. 09, closed: June 11, WID: RP-100360)

(eICIC_LTE-Core, leading WG: RAN1, REL-10, started: March 10, closed: June 11, WID: RP-100383)

(SONenh_LTE-Core, leading WG: RAN3, REL-10, started: March 10, closed: June 11, WID: RP-101004)

(LTE_CA_enh-Core, leading WG: RAN1, REL-11, started: March 11, closed: Mar.13, WID: RP-121999)

(MBMS_LTE_SC-Core, leading WG: RAN2, REL-11, started: June 10, closed: Sep.12, WID: RP-120258)

(LTE_eDDA-Core, leading WG: RAN2, REL-11, started: March 11, closed: Dec.12, WID: RP-120256)

(LCS_LTE-NBPS-Core, leading WG: RAN2, REL-11, started: March 09, closed: June. 13, WID: RP-131259)

(eICIC_enh_LTE-Core, leading WG: RAN1, REL-11, started: March 11, closed: Dec. 12, WID: RP-120860)

(SPIA_IDC_LTE-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec. 12, WID: RP-111355)

(COMP_LTE_DL-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111365)

(COMP_LTE_UL-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111365)

(LTE_TDD_add_subframe, leading WG: RAN1, REL-11, started: March 12; closed: Sep. 12, WID: RP-120384)

(FS_HetNet_eMOB_LTE, leading WG: RAN2, REL-11, started: March 11, closed: Sep. 12, WID: RP-110709)

(LTE_enh_dl_ctrl-Core, leading WG: RAN1, REL-11, started: Dec. 11, closed: Dec. 12, WID: RP-120871)

6.1.1 Control Plane and Common

Including output of [91#20][LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls (Nokia Networks)

R2-154249 Report of 91#20][LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls Nokia Networks report related to email discussion [91#20] Rel-10 TEI10
late; revised to R2-154894

R2-154894 Report of [91#20][LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls Nokia Networks report related to email discussion [91#20] Rel-10 TEI10
revision of R2-154249

- Vodafone: think we agreed the principle to do this for MO at the last meeting and think that msg 3 is natural choice. Msg 5 would allow combination with the cause values in msg3 that would require more effort.
- DCM: Think Msg5 makes sense as the current msg3 doesn't indicate any service type. Msg5 allows us to include several types of service type.
- LG: Would like to understand how many services should be considered. SCM was started for voice service prioritisation but eventually video and SMS was added.

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- Ericsson: Suggest that we consider what space we have and decide what services we could include.
- LG: If we are only concerned about CN congestion then msg5 is ok. If we need to consider RAN congestion then we should look at msg3. Nokia are interested in RAN congestion such as limit in the max number of connections. Vodafone agree with Nokia as MO data does not give any differentiation. Huawei: Also want to address RAN congestion and prefer msg3. Msg 5 might be considered later for other services. Ericsson: Agree.
- Samsung: Wonder whether we might need something in msg 3 even if we go for msg 5 based solution.
- DCM: Wonder whether we need to consider a critical extension of RRCConnRequest. ALU: Critical extension is messy. eNB would need to indicate whether it supports and UE must use the appropriate message. Huawei: Agree with ALU. New cause value is easier for the eNB implementation. DCM: In future we will likely find that we have to consider this is there is a use for the remaining spare value. Ericsson: Not sure the critical extension gives us much more size.
- Huawei prefer release 10. Qualcomm agree. CMCC agree. Ericsson, Intel: don't see need for release 10.

=> Noted

Agreements:
1: Introduce a solution allowing eNB to prioritize voice calls based on msg3 or msg5. MO calls only are considered. FFS whether any other services are considered as well.
2: Introduce a single new cause value in msg3. FSS whether cause value indicates 'voice' or 'voice/video', 'MMTEL' or something else.

=> Offline discussion to conclude the details of the cause value and the release.
=> Draft LS to CT1 to inform them of our decisions in R2-154963 (Nokia, Tero)

R2-154963 Draft LS on RAN2 agreements on VoLTE calls (to: CT1; cc: -; contact: Nokia Networks) Nokia Networks LS out

- Vodafone stated that video should be considered and suggest to remove voice from the LS. Proposal is 'MMTEL'. Nokia explain this was not the majority view in the discussion.
- LG support a general establishment cause.
- DT think we should prioritise voice.
- Ericsson think that RAN2 should make the decision which services map to the cause value.
- CMCC suggest to add video call as well as video.
- Vodafone would not like the network to reject a video call when the network is load but only reject data used.
- Intel not convinced that it is needed for video. The LS should also say to CT1 what RAN2 intends to do.
- KDDI thinks that RAN2 should more carefully discuss backward compatibility issues and the release of the CR to avoid issues for legacy eNB given that is affects a R8 IE.
- DCM think this aspect has already been discussed. eNB behaviour will not be specified.
- Samsung agree that we should be careful about changing this. Huawei indicate that we already used spare values in R10.
- Vodafone think that we need to be careful if there is a risk that emergency calls might not work. For example UE not detected emergency calls.

=> Postponed
=> Topic will be revisited at next meeting.

Security related

R2-154717 draftCR to correct UE messages to be sent only after security activation Deutsche Telekom AG; Vodafone draftCR 36.331 10.18.0 F Rel-10 TEI10
source to TSG should be "R2"

- ALU: In LTE it was left to the network to decide if message, e.g. reconfiguration, should be allowed or not. This is the reason it was informative. Change to normative would require more discussion. Qualcomm: We also need to consider rogue eNBs. ALU: The concern is that if he Annex becomes normative then what consequence do this have on UE in case a network doesn't follow the Annex strictly.
- ALU: Measurement report only sent after security activation should not be a big issue.

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- Vodafone: We can agree the normative changes and discussion the annex.
- Huawei: OK with the change to the annex but concerned that only the 2 UE messages are mentioned in the procedure text.

=> Procedural text changes and the change from '+' to '-' in the annex are ok. Further discussion on the changes to the Annex, and whether to allow earlier implementation than R10.

=> Revision in R2-154964 for R10 CR.

R2-154964 draftCR to correct UE messages to be sent only after security activation Deutsche Telekom AG; Vodafone draftCR 36.331 10.18.0 F Rel-10 TEI10

=> In principle agreed

R2-154718 draftCR to correct UE messages to be sent only after security activation Deutsche Telekom AG, Vodafone draftCR 36.331 11.13.0 A Rel-11 TEI10
source to TSG should be "R2"; wrong WI code used in CR cover and it should be "TEI10" as cat.A CR

R2-154719 draftCR to correct UE messages to be sent only after security activation Deutsche Telekom AG, Vodafone draftCR 36.331 12.7.0 A Rel-12 TEI10
source to TSG should be "R2"; wrong WI code used in CR cover and it should be "TEI10" as cat.A CR
Above 2 Tdocs not treated

IDC:

R2-154146 IDC Overview Correction Nokia Networks, Ericsson, NTT DOCOMO Inc. draftCR 36.300 11.13.0 F Rel-11 SPIA_IDC_LTE-Core

=> To be revised to mention 'harmonics' in line with the agreement

=> Revised in R2-154965

R2-154965 IDC Overview Correction Nokia Networks, Ericsson, NTT DOCOMO Inc. draftCR 36.300 11.13.0 F Rel-11 SPIA_IDC_LTE-Core

=> In principle agreed

R2-154777 Clarification on FDD/TDD difference for UL CA IDC indication Ericsson draftCR 36.331 11.13.0 F Rel-11 SPIA_IDC_LTE-Core

=> To be revised to add missing information on the cover sheet

=> With changes above the draft CR in R2-154966 is in principle agreed (implicitly endorsed)

R2-154778 Clarification on FDD/TDD difference for UL CA IDC indication Ericsson draftCR 36.331 12.7.0 A Rel-12 SPIA_IDC_LTE-Core
Not treated

R2-154812 TDM DRX cycle for IDC Intel Corporation discussion

=> Withdrawn

R2-154728 [DRAFT] Reply LS on 2 UL inter-band CA protection of GNSS NTT DOCOMO, INC. LS out LS answer to LSin R2-153048 Rel-11 SPIA_IDC_LTE-Core

✓ => LS approved in R2-154967

Multiple NS/P-Max:

R2-154535 Potential coverage issue on multiple NS/P-Max NTT DOCOMO, INC. discussion

- DT share concern and think the problem has to be addressed. Orange: Share the concerns. TeliaSonera: Also agree.
- Qualcomm ask if the problem really exist if this is not an isolated cell. Could let RAN4 decide whether this is needed.
- Nokia wonder if this was discussed in RAN4. Difficult to benefit from the extended cells unless you have isolated cells.
- DCM: We had similar discussion for wideband RSRQ and in the end we added additional Qqualmin for similar coverage issues.

=> Offline discussion to determine whether we need to address this case (DCM).

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=> Noted

R2-154986 Way forward on multiple NS/P-Max NTT DOCOMO, INC., Deutsche Telekom, Orange, TeliaSonera, Sprint, CMCCdiscussion
=> Noted

Agreements
1. Support coverage extension for multiple NS/P-Max capable UEs.
2. An additional NS/P-Max list is included in SIB1/3/5.
3. Multiple NS/P-Max capable UEs perform cell selection by using the additional P-Max.
4. Pcompensation is modified to take into account the difference between the legacy P-Max and the additional P-Max.

R2-154459 Introduction of Multiple NS and Pmax Nokia Networks draftCR 36.331 10.17.0 B Rel-10 TEI10
R2-154460 Introduction of Multiple NS and Pmax Nokia Networks draftCR 36.331 11.12.0 A Rel-11 TEI10
R2-154461 Introduction of Multiple NS and Pmax Nokia Networks draftCR 36.331 12.7.0 A Rel-12 TEI10
wrong spec ver number used in CR cover; it should be 12.7.0
- Above 3 Tdocs not treated pending discussion of offline on R2-154535

NS value:

R2-154503 Correction to application of a NS value in RRC_CONNECTED HTC Corporation draftCR 36.331 10.18.0 F Rel-10 LTE_CA-Core
- Intel think this was discussed at last meeting and no change needed as scenario is that the UE is coming from idle to connected. HTC: The case to address if that the UE receives NS value in SIB2 and then will not apply it anymore. Also after handover the UE will not received the NS in SIB2.
- Ericsson think he text covers the case when UE is in connected and acquires SIB2, not when it acquires in SIB2 and then moves to connected. Samsung: Understand we never want a UE in connected to take new SIB2 values into account and CR is not needed.
- H/w agreed with other and don't think CR is needed.

=> Not agreed

R2-154521 Correction to application of a NS value in RRC_CONNECTED HTC Corporation draftCR 36.331 11.13.0 A Rel-11 LTE_CA-Core
R2-154523 Correction to application of a NS value in RRC_CONNECTED HTC Corporation draftCR 36.331 12.7.0 A Rel-12 LTE_CA-Core
Above 2 Tdocs not treated

MCCH modification in 1.4 MHz BW:

R2-154745 MCCH modification for 1.4MHz Ericsson discussion
- Ericsson clarified that we would agree for R13 with magic sentence.
- ZTE think the previous agreement was that we agreed at least for R13 but the issue has existed since R9.
- Intel thinks we clarified to RAN4 that we will introduce from R13.
- ZTE understand that the spec in R9 will not work so the change is submitted in R9
- Huawei understand the intent was to fix for R13 but not before.

=> Noted

R2-154176 MCCH acquisiation for 1.4MHz MBSFN ZTE Corporation draftCR 36.331 9.18.0 B Rel-9 TEI9
R2-154177 MCCH acquisiation for 1.4MHz MBSFN ZTE Corporation draftCR 36.331 10.17.0 A Rel-10 TEI9
wrong WI code used in CR cover; it should be TEI9 as cat.A CR
R2-154178 MCCH acquisiation for 1.4MHz MBSFN ZTE Corporation draftCR 36.331 11.12.0 A Rel-11 TEI9
wrong WI code used in CR cover; it should be TEI9 as cat.A CR
Above 3 Tdocs not treated

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R2-154179 MCCH acquisiation for 1.4MHz MBSFN ZTE Corporation draftCR 36.331 12.7.0 A Rel-12 TEI9
wrong spec ver number & WI code used in CR cover; it should be TEI9 as cat.A CR
- Nokia think we could merge the ZTE and Ericsson CRs. Prefer to say 'not use notification configuration parameters' instead of 'UE ignore'. ZTE ok with change but trying to avoid some possible UE issues. Samsung prefer the Ericsson CR in the paragraph where it specified how the UE detects changes.
- ZTE think something is needed for the description of the mandatory field.
- Intel think CRs can be merged with text in the general section and field description

=> CR will be revised along the lines of proposal from Samsung and also with some text in field description. Revision in R2-154968. CR will be release 13 cat B. CR will allow early implementation

R2-154968 MCCH acquisiation for 1.4MHz MBSFN ZTE Corporation draftCR 36.331 12.7.0 B Rel-13 TEI13
=> In principle agreed

R2-154746 MCCH change notification for 1.4 MHz Ericsson pCR 36.331 12.6.0 Rel-13 MBMS_LTE, TEI13
wrong Type used; it should be "draftCR"
- Samsung think change is also needed in para 5.8.1.3 just before Note2. Huawei: Agree. The problem with the ZTE approach is that it is inside the procedure instead of at the initiation of the procedure.

=> Not agreed

Other:

R2-154749 MaxLayerMIMO in HandoverPreparationInformation Ericsson pCR 10.16.0 Rel-10 LTE-L23, TEI10
wrong Type used; it should be "draftCR"
- ALU: Which release/version takes precedence when the release/version is indicated to the target.
- Huawei: Think it is difficult to rely on this indication. If target configured UE with R12 config and this release 10 feature. What should it indicate to the target?
- Samsung: We assume that the target will use full config if it receives a extensions it doesn't comprehend rather than relying on the config release. Ericsson this this behaviour is not specified - we specify that the eNB may use this field to execute full configuration.
- DCM: Target can not know whether the source configured this feature. One solution if the proposal from Ericsson.
- Huawei: Similar view as Samsung but also has some sympathy with DCM's comment.
- Intel: MaxlayerMimo is not included in AS-config. Does it mean handover if not working in current specification. Ericsson: It can't be carried for the PCell.
- Huawei: Suggest adding MaxLayerMimo into the AS-config.
- Qualcomm: Suggest that the eNB behaviour to apply full configuration may also apply to same release. Huawei: Think the issue is not only for the same release.
- Huawei: Problem is adding a late extension for AS-config is impossible. Need to find another approach.

=> MaxLayerMimo can be included in the AS-config.
=> Offline discussion to address the configuration inconsistency issue.
=> Revision to be provided in R2-154969.

R2-154969 MaxLayerMIMO in HandoverPreparationInformation Ericsson draftCR 36.331 10.16.0 F Rel-10 LTE-L23, TEI10
- CR is the latest status but the aspect related to ue-ConfigRelease is not yet concluded

=> Note agreed. Will be revised for next meeting

R2-154750 MaxLayerMIMO in HandoverPreparationInformation Ericsson draftCR 36.331 11.13.0 F Rel-11 LTE-L23, TEI11

R2-154751 MaxLayerMIMO in HandoverPreparationInformation Ericsson draftCR 36.331 12.7.0 A Rel-12 LTE-L23, TEI11
wrong CR cat & WI code used in CR cover: it should be "cat.A" & "LTE-L23, TEI11"
Above 2 Tdocs not treated

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R2-154806 UE handling on Paging message in RRC connected mode Huawei, HiSilicon discussion
- ALU: Understand that it is clear that the UE should not respond in connected. Huawei: Have same understanding but some UEs do this.
- Intel: Agree UE should not respond in connected but thing we have no clearly specified in which cases the UE is connected. Huawei: UE is connected after reception of RRC Conn Setup but according to NAS spec UE will not respond after a page is received.

=> RAN2 understanding that UEs should not respond to paging in connected. We will take no action to address non-compliant UE implementations.
- Ericsson: If UE doesn't receive the release messages the UE will eventually detect that it no longer has communication with the eNB. Qualcomm: Think this will take a long time to resolve itself.
- ALU: Wonder how frequent this is happening. Has it be seen in the field. Huawei: Not sure how often this happens.

=> Noted

R2-154807 Draft LS on Paging handling in RRC connected mode Huawei LS out Rel-8 TEI8, LTE-L23
- Not treated following outcome of discussion of R2-154806

R2-154815 Correction to SystemTimeInfoCDMA2000 IE Nokia Networks draftCR 36.331 11.13.0 F Rel-11 LTE-L23, TEI11
wrong WI code used in CR cover: it should be "LTE-L23, TEI11" since LTE-L23 was a REL-8 WI code
- ALU: What is the relationship with CA. For cdma handover it is only the PCell that matters. Nokia: Not directly related to aggregation. Applicable to any deployment of FDD and TDD cells. Desire is to set the system time in the same way (asynchronous) on both FDD and TDD cells. If not there is impact on UE battery to acquire SIB8 more often. It is possible to set them in the same way but the table is misleading as it says not recommended.
- Samsung: Think this is an optimisation and not sure it affects power consumption.

=> CR is in principle agreed

R2-154412 Correction on T340 handling HTC Corporation draftCR 36.331 11.13.0 F Rel-11 LTE_eDDA-Core
- LG think if the UE receives the release then the configuration is released and implicitly the timer is stopped. HTC understand he timer is still running. In other placed we stop the timer explicitly
- Ericsson agree with LG. Also scenario in the cover page is not aligned to the change.
- ZTE agree with Ericsson and LG think the CR is not needed.

=> Not agreed.

R2-154415 Correction on T340 handling HTC Corporation draftCR 36.331 12.7.0 A Rel-12 LTE_eDDA-Core
Not treated

R2-154524 Clarification on support of extened wait time HTC Corporation draftCR 36.306 10.14.0 F Rel-10 NIMTC-RAN_overload
- Intel agree that the 'or' look a bit strange but still thinks there is no issue based on description in RRC. Following RRC spec the UE will have to support both.
- ZTE agree the intent of the CR.

=> Not agreed but will agree for R12

R2-154525 Clarification on support of extened wait time HTC Corporation draftCR 36.306 11.12.0 A Rel-11 NIMTC-RAN_overload
Not treated

R2-154526 Clarification on support of extened wait time HTC Corporation draftCR 36.306 12.6.0 A Rel-12 NIMTC-RAN_overload

=> Clarify on the cover page that this was the original intent and RRC is already specified in the way. Remove the 'do' from existing text.

=> Revision in R2-154970 is in principle agreed as Cat F and with cover sheet changes.

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R2-154620 Correction of need code definition terminology Ericsson draftCR 36.331 10.18.0 F Rel-10 TEI10
wrong WI code used in CR cover: it should be "TEI10"
- Intel point out that LPP has the same issue.
=> CR for LPP can be provided at next meeting.
=> Not agreed but can be agreed for R12

R2-154625 Correction of need code definition terminology Ericsson draftCR 36.331 11.13.0 A Rel-11 TEI10
wrong WI code used in CR cover: it should be "TEI10"
Not treated

R2-154627 Correction of need code definition terminology Ericsson draftCR 36.331 12.7.0 A Rel-12 TEI10
wrong WI code used in CR cover: it should be "TEI10"
=> Cover sheet should explain that this applies to earlier releases but only corrected from R12 onwards.
=> Revision in R2-154971 is in principle agreed as Cat F TEI12.

R2-154779 Correction on categories in supportedBandCombination Ericsson draftCR 36.306 12.6.0 F Rel-12 TEI12
- Huawei: Think that without this CR the UE still needs to behave this way because CRs have fallback to lower categories. Can agree but not sure if there are any consequences. Can be clarified on the coversheet
- Intel are ok with the CR.
=> Clarify the consequences if not approved and add summary of changes on the cover sheet.
=> Revision in R2-154972 is in principle agreed

R2-154803 Rx-Tx Time Difference Reporting Huawei, HiSilicon discussion
- Intel have the same understanding that the UE should not wait for the neighbour cells. Not sure we need any additional clarification. Huawei: In second note it does not say it doesn't apply for tx-rx time difference.
- Nokia assume as the measurement only applies to the PCell then it is the 'strongest applicable cell'. Ericsson agree.
=> RAN2 confirm the understanding that the UE does not wait of Rx-Tx time difference of any neighbour cell.
=> Noted

R2-154804 Rx-Tx Time Difference Reporting Huawei, HiSilicon draftCR 36.331 11.12.0 F Rel-11 TEI11
=> Not agreed

R2-154805 Rx-Tx Time Difference Reporting Huawei, HiSilicon draftCR 36.331 12.6.0 A Rel-12 TEI11
Not treated

Withdrawn:
R2-154112 IDC Overview Correction Nokia Networks, Ericsson, NTT DOCOMO Inc. CR 36.300 11.13.0 F Rel-11 SPIA_IDC_LTE-Core
R2-154113 IDC Overview Correction Nokia Networks, Ericsson, NTT DOCOMO Inc. CR 36.300 12.7.0 A Rel-12 SPIA_IDC_LTE-Core
R2-154114 IDC Overview Correction Nokia Networks, Ericsson, NTT DOCOMO Inc. CR 36.300 13.1.0 A Rel-13 SPIA_IDC_LTE-Core
R2-154366 Correction to application of a NS value in RRC_CONNECTED HTC Corporation CR 36.331 10.18.0 F Rel-10 LTE_CA-Core
R2-154367 Correction to application of a NS value in RRC_CONNECTED HTC Corporation CR 36.331 11.13.0 A Rel-11 LTE_CA-Core
R2-154368 Correction to application of a NS value in RRC_CONNECTED HTC Corporation CR 36.331 12.7.0 A Rel-12 LTE_CA-Core

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6.1.2 User Plane

The documents in this AI treated in the LTE UP session. (see Anne G)

R2-154345 Further discussion on MSI with zero length Samsung Electronics Co., Ltd discussion
R2-154872 Clarification on L field setting to zero Samsung Electronics Co., Ltd draftCR 36.321 12.7.0 D Rel-12 TEI12
late
Withdrawn:
R2-154346 Clarification on L field setting to zero Samsung Electronics Co., Ltd CR 36.321 12.7.0 D Rel-12 TEI12

6.2 LTE: Rel-12

6.2.1 WI: Dual Connectivity for LTE (SCE)

(LTE_SC_enh_dualC-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Dec.14, WID: RP-141797)

TR of corresponding SI: 36.842

6.2.1.1 Dual Connectivity – Control Plane

R2-154133 Correction on SCG release ZTE Corporation draftCR 36.331 12.7.0 F Rel-12 LTE_SC_enh_dualC-Core
wrong spec ver number used in CR cover; it should be 12.7.0
- ALU: Think the requirement is already covered in the MCG part of the procedure. ZTE: Think that even in the MCG configuration the requirement is not covered.
- Ericsson: Think it is not in the MCG configuration and maybe the CR is needed.

=> Offline discussion to conclude whether this is needed (ZTE, Yumin)
- ZTE update from offline. Conclusion is that spec does not allow bearer type change back to MCG when SCG is released.

=> In principle agreed.

R2-154187 Clarification to SCG RLF timers and constants reconfiguration Spreadtrum Communications draftCR 36.331 12.7.0 F Rel-12 LTE_SC_enh_dualC-Core
wrong spec ver number used in CR cover; it should be 12.7.0
=> In principle agreed

R2-154842 Clarification on TDD-FDD CA and DC Qualcomm Incorporated discussion
P1
- DCM think the paper is focusing UL parameter to determine if the tdd-FDD-CA-PCellDuplex capability is needed. Thinks the band combination indicates the RF capability but the tdd-FDD-CA-PCellDuplex relates to the baseband capability. Qualcomm: Agree but in some cases it is clear from the rf capability.
- Huawei think that for a single UL it is clear whether the UE supports the PCell but there is no problem to also have the tdd-FDD-CA-PCellDuplex.
- Vodafone: Our RAN4 delegates confirm the understanding of DCM so nothing to clarify for point 1. Qualcomm: There are a subset of cases where the field doesn't give and information.
- Ericsson: Question if whether the UE always includes this field for any fdd/tdd band combination.
- Huawei: There is no problem to include it. Nokia: If we omit it then there is an potential ambiguity.
- Intel: Think it is good to clarify if UE should include the field in case UL parameters are include for TDD and FDD bands.
- Ericsson: Think that originally the intent was that TDD/FFD CA capability could be derived from the band combination. Agree with Qualcomm.

=> Text today is not fully clear whether UE is allowed to omit the field. Discuss offline to determine the correct behaviour and how to clarify. (Qualcomm, Aziz)
=> When there is DC support for any band combinations containing at least one FDD band with bandParametersUL and at least one TDD band with bandParametersUL, the UE

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capability field tdd-FDD-CA-PCellDuplex indicates that the UE can support at least one FDD band and one TDD band in the same CG.
- Qualcomm update from offline. Concluded that the proposal was agreeable. Huawei suggested to go a step further to define behaviour if the field is missing.
- Huawei support the motivation that if UE only supports one uplink then there is no need for this field. If UE supports 2 UL and UE supports PCell for both then it can also be omitted.

=> Noted

R2-154843 Clarification on tdd-FDD-CA-PCellDuplex Qualcomm Incorporated draftCR 36.306 12.6.0 F Rel-13 LTE_CA_TDD_FDD-Core, LTE_SC_enh_dualC-Core
=> In principle agreed.

R2-154889 Clarification on Pcell support Vodafone draftCR 36.306 12.6.0 F Rel-12 LTE_SC_enh_dualC-Core
late
- Vodafone ask if we agree the general statement do we need the FDD-TDD specific text. DCM have same question. Best approach may be to have a generic description., but wonder if the band combinations is the best place as it relates to RF capabilities rather than baseband capabilities.
- DCM

=> Discuss offline to find the best way to capture this.
=> Revision in R2-154979.

R2-154979 Clarification on Pcell support Vodafone draftCR 36.306 12.6.0 F Rel-12 LTE_SC_enh_dualC-Core
=> In principle agree.

6.2.1.2 Dual Connectivity – User Plane

Documents in this agenda item might be treated in the Legacy LTE UP session.

No contributions received.

6.2.2 WI: Small Cell Enhancements – Physical Layer

(LTE_SC_enh_L1-Core, leading WG: RAN1, REL-12, started: Dec.13, **closed**: Dec.14, WID: RP-132073)

R2-154212 Correction to triggerQuantityCSI-RS Spreadtrum Communications, CATR draftCR 36.331 12.7.0 F Rel-12 LTE_SC_enh_L1-Core
wrong spec ver number used in CR cover; it should be 12.7.0
=> In principle agreed

6.2.3 WI: LTE Device to Device Proximity Services - Radio Aspects

(LTE_D2D_Prox-Core, leading WG: RAN1, REL-12, started: Mar.14, **closed**: Mar.15, WID: RP-142043)

RAN1 TR 36.843 on D2D

6.2.3.1 Control Plane and Common

R2-154038 Corrections on sidelink related description in TS 36.300 Huawei, HiSilicon draftCR 36.300 12.7.0 F Rel-12 LTE_D2D_Prox-Core
- LG ask if mode 2 should be covered in the new scheduling section.
- Intel think the sidelink scheduling is already covered in the sidelink section and so not needed to be added on the new section.
- Intel think the no HARQ feedback support for sidelink is already captured in the sidelink section.
- ZTE agree with Intel. Can agree with CR apart from last part which is not essential.

=> Revision without the new section at the end (11.1.3)
=> Revision in R2-154973 is in principle agreed.

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R2-154039 Corrections on sidelink related description in TS 36.300 Huawei, HiSilicon draftCR 36.300 13.1.0 A Rel-13 LTE_D2D_Prox-Core
wrong spec version number used in CR cover: it should be 13.1.0
Not treated

R2-154040 Corrections on sidelink terminologies in TS 36.302 Huawei, HiSilicon draftCR 36.302 12.5.0 F Rel-12 LTE_D2D_Prox-Core
=> Not agreed (covered by revision of R2-154664)

R2-154163 Decoding of PDCCH with SL-RNTI Ericsson draftCR 36.302 12.5.0 F Rel-12 LTE_D2D_Prox-Core
- Ericsson ok to remove the associated transport channel for SL-RNTI. Can be left N/A. ALso ok to add ePDCCH.
- Intel think that in Idle mode the UE applies the reception combination only on PCell.
- Qualcomm agree with Intel. Think that non-serving cell might be enough. Huawei think it should apply to discovery as well as communication. Intel think the motivation was due to the introduction of SL-RNTI and hence only addressed communication.
- Ericsson asks whether the tables are actually useful for UE vendors. Intel: Think this is a guideline.

=> Offline discussion to progress the tables describing reception capabilities of the UE.
=> Result to be captured in revision of the Intel CR
=> Not agreed (covered by revision of R2-154664)

R2-154664 Corrections to Sidelink in TS 36.302 Intel Corporation draftCR 36.302 12.5.0 F Rel-13 LTE_D2D_Prox-Core
=> Revision to capture outcome of offline in R2-154974

R2-154974 Corrections to Sidelink in TS 36.302 Intel Corporation draftCR 36.302 12.5.0 F Rel-13 LTE_D2D_Prox-Core
- Intel say that the combinations for reception of SIB from other cells needs more consideration.

=> In principle agreed.

R2-154041 Definitions of sidelink terminologies in TS 36.306 Huawei, HiSilicon draftCR 36.306 12.6.0 F Rel-12 LTE_D2D_Prox-Core
=> In principle agreed.

R2-154541 Configuraton for RoHC profiles of STCHHuawei, HiSilicon draftCR 36.331 12.7.0 F Rel-12 LTE_D2D_Prox-Core
- Qualcomm understand that the RoHC profile is provided by upper layers no UE implementation.
- Chair understood that the parameters are contained in the preconfiguration information
- Intel think we agreed the unidirectional profiles. Ericsson think the profile relate to the IP protocols that are compressed.
- ZTE think the configuration comes from upper layers via ProSe function. It is not UE implementation. Huawei think the preconfiguration is not used in coverage. Huawei think that in this case some other clarification may be needed.
- Ericsson share the view of ZTE and Qualcomm.

=> Not agreed.

6.2.3.2 User Plane

Documents in this agenda item treated in the Legacy LTE UP session.

R2-154042 Corrections for sidelink in TS 36.321 Huawei, HiSilicon draftCR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
R2-154248 Correction on MAC header for SL-SCH CATT draftCR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154407 Corrections to Sidelink LG Electronics Inc. draftCR 36.323 12.4.0 F Rel-12 LTE_D2D_Prox-Core
Withdrawn:

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R2-154054 Correction on MAC header for SL-SCH CATT CR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
R2-154314 Corrections to Sidelink LG Electronics Inc. CR 36.323 12.4.0 F Rel-12 LTE_D2D_Prox-Core

6.2.4 WI: Further MBMS Operations Support for E-UTRA

(MBMS_LTE_OS-Core, leading WG: RAN2, REL-12, started: Sep.13, **closed**: Dec.14, WID: RP-140282)

No contributions received.

6.2.5 WI: Network-Assisted Interference Cancellation and Suppression

(LTE_NAICS-Core, leading WG: RAN1, Rel-12, started: Mar 14, **closed**: Dec.14, WID: RP-140519)

R2-154834 Discussion on NAICS subset capability Qualcomm Incorporated, Samsung discussion
- Qualcomm clarify that the NAICS capability puts a limit in the overall configuration. Nokia think the NAICS capability and the CA capability are independent things. This proposal is trying to combine them. Qualcomm think we are no changing anything as it is already possible for the UE to include a list of NAICS capability combinations, only question is about what subsets are implied by inclusion of one NAICS capability combination.
- Nokia understand the NAICS capability are on top of the aggregation capabilities. We can ask RAN4.
- MediaTek think it is important to address this issue. The NAICS processing capability is shared and no 'add-on' on top of aggregation.
- Intel share the view of Qualcomm and MediaTek and think the RAN4 definition of subset is not so clear.
- Nokia prefer to indicate to RAN4 what we have done and ask them if they see any issues.

=> Draft LS to RAN4 (Qualcomm) in R2-154975 to explain our signalling, what we are considering to change, and ask if they see any issues

R2-154975 Draft LS to RAN4 on NAICS subset capability (to: RAN4; cc: -; contact: Qualcomm) Qualcomm LS out

=> In yellow column of table remove yellow highlight and italics. Change 100CC to 100 CC over 2 CC and change 200CC to 200 CC over 2 CC.
=> Replace revision marks in the suggested change.
=> Revision in R2-154995 is approved

R2-154835 Discussion on NAICS Configuration Qualcomm Incorporated, Samsung disc
- Nokia think we do not specify for cases where the network exceeds UE capabilities. This problem stems from the previous agreement that NAICS applies for configured carriers, not activated carriers. Qualcomm explain that the UE would be expected to remember the configuration for all carriers (despite them being beyond the capabilities).
- MediaTek think we just need to be sure that UE doesn't reject the configuration. Nokia ask why the network behaviour is prohibited today.
- Huawei think that the network should respect the capabilities and would like to understand the benefit for this case.
- Ericsson ask if the eNB can know where the UE uses NAICS. Qualcomm explain that it is reflected in the CSI reports. Nokia think network can't know why the CSI reports improve.
- Ericsson ask if we go this way then why do we send NAICS capability at all. Nokia think that there is a cost to do NAICS to get the required information to provide to the UE and network needs to select in which cases to apply up. Qualcomm think network can still work in this way.

=> Noted

6.2.6 WI: Low Cost MTC for LTE

(LC_MTC_LTE-Core, leading WG: RAN1, REL-12, started: Jun 13, **closed**: Dec 14, WID: RP-140522)

R2-154186 Correction to ue-RadioPagingInfo IE Spreadtrum Communications draftCR 36.331 12.7.0 F Rel-12 LC_MTC_LTE-Core
wrong spec ver number used in CR cover; it should be 12.7.0
- Intel think this is not backward compatible. Don't see any issue with the current signalling.

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- Spreadtrum suggest to revision to explain that the field should be according to the DL category
- Huawei don't see a problem as we only had DL cat 0 and UL cat 0 and they can only be used together.
- CATT see some benefit in updating the field description.
- Intel think there is no field description for this field. Ericsson there is no field description here as it is an IE.
- Ericsson don't see the issue. MediaTek agree.

=> Not agreed.

6.2.7 WI: Group Call eMBMS congestion management for LTE

(GCSE_LTE-MBMS_CM-Core, leading WG: RAN3, started: Sep. 14, **closed**: Mar. 2015, WID: RP-141035)

No contributions received.

6.2.8 WI: FDD/TDD Carrier Aggregation

(LTE_CA_TDD_FDD-Core, leading WG: RAN1, REL-12, started: Jun 13, closed: Jun 14, WID: RP-140465)

No contributions received.

6.2.9 LTE Other Closed Rel-12 WIs

Input to any other Rel-12 WI/SI not explicitly listed above.

(LCS_BDS-LTE-Core, leading WG: RAN2, REL-12, started: Mar 13, closed: Dec 13, WID: RP-130416)

(LTE_eDL_MIMO_enh-Core, leading WG: RAN1, REL-12, started: Sep 12, closed: June 14, WID: RP-121416)

(HetNet_eMOB_LTE-Core, leading WG: RAN2, REL-12, started: Dec.12, target: Sep 14, WID: RP-122007)

(Cov_Enh_LTE-Core, leading WG: RAN1, REL-12, started: Jun.13, closed: Jun.14, WID: RP-130833)

(LTE_TDD_eIMTA-Core, leading WG: RAN1, REL-12, started: Dec 12, closed: Jun.14, WID: RP-121772)

(SCM_LTE-Core, leading WG: RAN2, REL-12, started: Mar.14, closed: Sep.14, WID: RP-140434)

Including corrections to TEI12 enhancements introduced in Rel-12.

6.2.9.1 LTE Other Closed Rel-12 WIs – CP and common CP/UP

R2-154211 Clarification to parameter Qqualmin Spreadtrum Communications, CATR draftCR 36.331 12.7.0 F Rel-12 TEI12
wrong spec ver number & WI codes used in CR cover: TEI11 should be deleted

- Huawei thinks it is not needed as it already refers to Qqualmin fields and the note refers to what is supported by the UE.
- Intel think that we has specified behaviour for when the UE doesn't comprehend fields (i.e. interprets as absent)

=> Not agreed.

R2-154272 highPriorityAccess for MMTEL voice MMTEL video and SMS MediaTek Inc. discussion Rel-12 SCM_LTE-Core

- Intel think that the intent of 1A and 1B is the same. Intel prefer 1A.
- LG think that 1A adds new UE behaviour and prefer not to add new behaviour.
- Nokia agree that something is missing for high priority access. Think we could avoid the 2 changes and have separate text for high priority access establishment cause. LG think we only have 2 barring factors (MO data and MO signalling). If we have separate text for high priority then we don't know which baring factor to apply.

=> Noted

R2-154271 highPriorityAccess for MMTEL voice, MMTEL video and SMS MediaTek Inc. draftCR 36.331 12.7.0 F Rel-12 SCM_LTE-Core
wrong spec ver number used in CR cover; it should be 12.7.0

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=> Revise the CR to say: 3> if establishmentCause is set to mo-Signalling (including the case that mo Signalling is replaced by higherPriorityAccess according to 3GPP TS 24.301[35]) (no additional bullets required)
=> Revision in R2-154976.

R2-154976 highPriorityAccess for MMTEL voice, MMTEL video and SMS MediaTek Inc. draftCR 36.331 12.7.0 F Rel-12 SCM_LTE-Core
=> In principle agreed

R2-154578 High Priority Access for MMTEL voice, MMTEL video and SMS LG Electronics Inc. discussion
- MediaTeK think both options work and we all know the behaviour we want. MediaTek ok with both. LG is against option 1A.
- DCM prefer option 1A.
- Vodafone don't see a huge difference between the options. And if we agree anything it should not have impact on legacy UEs.
- Intel agree 1B is a new condition but don't like the 'which may be replaced'. LG think a more clear approach would be for CT1 to defines an explicit indication but trying to avoid specifying it leads to the strange text.
- Nokia do not want to exclude implementation options. Suggest 'if the UE has highpriority access according to CT1 spec'

=> Noted

R2-154288 256QAM support for UE category 10 and below Intel Corporation discussion
- AT+T support the proposal.
- Apple see real gain from supporting this and there is real need to extend the specification.
- Qualcomm ask if it has been discussed in RAN1. Intel explain that RAN1 has discussed and not concluded.
- Huawei think the 306 CR must be based on RAN1. Intel think in this case the parameter values are not changed so there is no problem to look at the CR in RAN2. Huawei think maybe RAN1 could decide to introduce a new category.
- Huawei think when 256 QAM was first discussed they ended up adding new category. Intel think RAN2 just need to determine if the change is feasible from RAN2 point of view. Apple think the TB size, etc is already known and we are not likely to get different numbers from RAN1.
- Ericsson agree with Huawei that we should wait for RAN1.

=> Noted

R2-154289 256QAM support for UE category 10 and below Intel Corporation draftCR 36.306 12.6.0 F Rel-12 TEI12, LTE_SC_enh_L1-Core
- Qualcomm prefer to wait until RAN1provide some information.
- AT+T suggest we wait to see if RAN1 provide input on Friday.
- Apple think there are no issues with the CR.
- Samsung

=> Need to wait for input from RAN1 to conclude.
=> Postponed

R2-154290 Correction to the support of Mobility State reporting Intel Corporation draftCR 36.331 12.7.0 F Rel-12 HetNet_eMOB_LTE-Core
- DCM ask if the UE always indicates this information. There is the case that the network doesn't provide the mobility state parameter. In this case UE would not need to indicate. Intel think it does no harm for the network.
- ALU think the intent when the CR was written is as Intel propose but the optimisation could have been done.
- Qualcomm think it is better not to change the UE behaviour and always include it. Should also clarify that UE includes even in the case that network doesn't provide the parameters.
- Samsung agree with Qualcomm.

=> Only change in the field description is the change of "Otherwise UE is in normal state" to say "Otherwise the UE is in normal mobility state".
=> Revision in R2-154978.
- After more discussion a revision to the field description was made.

R2-154978 Correction to the support of Mobility State reporting Intel Corporation draftCR 36.331 12.7.0 F Rel-12 HetNet_eMOB_LTE-Core
=> In principle agreed

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R2-154724 Some general RRC issues Samsung Telecommunications other
wrong Type used; it should be type discussion
P1
- DCM think it is good to specify the conditions somewhere in the spec.
- Nokia share DCM's view. In general can agree the principle but for features with complex dependency it is good to clarify.
- Samsung think there is a risk if we only do it for some cases, we end up adding it for additional cases.
- ALU suggest a general statement saying that there may be exceptions in some cases.
- H/w support ALU approach. Samsung think they are not exception but clarifications.

=> Confirm the general principle to not specify detailed EUTRAN requirements concerning respecting UE capabilities when configuring the UE.
=> Add a general sentence to the spec and that in some cases extra clarification may be provided.
=> CR may be provided to the next meeting
P2
- Ericsson: In the IDC case there is description in the procedure how the UE uses the uplink signalling. Procedure doesn't say that signalling can be included in other cases. If it is allowed in other cases then it should state in the procedure.
- Samsung: It is clear that the current spec is not consistent.
- ALU: Think the agreement from last ASN.1 review was that UE only includes when procedural text says so and update the procedure to clarify cases where the field may be optionally included.

=> Offline discussion regarding proposal 2.
=> Issue can be revisited at a future meeting.
=> Noted

late

R2-154725 Some general RRC issues Samsung Telecommunications draftCR 36.331 12.7.0 F Rel-12 LTE_CA-Core, SPIA_IDC_LTE, TEI12
late; WI codes not fit with REL-12 CR and TEI12 needed
=> Not treated following discussion of R2-154724

6.2.9.2 LTE Other Closed Rel-12 WIs – UP

The documents in this AI treated in the LTE UP session. (see Anne G)

R2-154175 Correction on transparent MAC PDU ZTE Corporation draftCR 36.321 12.7.0 F Rel-12 TEI12
wrong spec ver number used in CR cover; it should be 12.7.0

R2-154273 Scheduling Request on PUCCH with UL-SCH resource MediaTek Inc. draftCR 36.321 12.7.0 F Rel-12 LTE_CA-Core, TEI12
wrong spec ver number & WI code used in CR cover: TEI12 should be added since LTE-CA-Core was a REL-10 WI code

7 LTE Rel-13

7.1 WI: Licensed-Assisted Access using LTE

(LTE_LAA-Core, leading WG: RAN1, started: June 15, target: Dec. 15, WID: RP-151045)

Time budget: 1,5 TU

The approved version TR 36.889 is available here.

7.1.1 Organizational

Technically endorsed 36.300 CR after RAN2-91: R2-153907

Incoming LSs

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R2-154028 LS on LAA DL LBT Priority Classes (R1-156131; contact: Ericsson) RAN1 LS in to: RAN2 Rel-13 LTE_LAA-Core
late
- Ericsson explain that the impact on RAN2 is that it will need to define some mapping from QCI to priority class.
- DCM think there may be some RAN3impact as well.
- MediaTek ask if the mapping can be left to network implementation. Ericsson that to ensure coexistence it is important to have defined rules. ZTE agree. Intel have the same view.

=> Noted
=> RAN2 will need to introduce a mapping table if we have >1 class in R13. Details TBD and contributions invited to next meeting.

R2-154898 LS on UE-reported RSSI measurements for LAA (Samsung) RAN1
=> Noted

7.1.2 RRM Measurements

RSSI

R2-154291 RSSI measurement for LAA Intel Corporation discussion
P1
- Huawei think there is a different between averaging within the window compared to L3 filtering. Ericsson agree and think it should just be the average.
- Nokia ask if all the windows will have the same number of samples. Intel understand the averaging within a duration is done in physical layer. Motorola think that L3 filtering has a long history and so the averaging should be within the window. Intel think the window should be a simple block window. Samsung think he RAN1 assumption is that there will be a single physical layer measurement duration configured so they will all be the same size. Also the should match up with measurement gaps and so there should not be 'half' samples.
- CMCC ask if the average RSSI and occupancy is based on the same set of samples. Intel assume this is the case.
- DCM think that the L3 filtering makes sense.
- ALU ask how the channel occupancy is calculated over this layer 3 window. Intel think that he physical layer would need to provide number of samples, etc. Samsung think this is not yet concluded.
- Broadcom is concerned that L3 filtering could delay the measurement. Issue is over how long it is averaged as it is not representative. Intel think the window will be configured by eNb and will not be so lonng.

P2,3,4
- Huawei suggest RAN1 provide the parameters for the timing configuration.
- Motorola for serving carrier the timing configuration may not be needed. Samsung explain this would be for detecting hidden nodes so eNB knows when the measurement was taken.
- Intel understand that RAN1 assumption is that L1 measurement timing will be aligned with the measurement gaps. Broadcom think we do not get know whether the existing measurement gas are sufficient. Qualcomm think this was discussed before and we agreed to use current assumption until RAN4 tell us different.
- ZTE ask if there can be multiple L1 durations per period.

P5
- Intel clarify that if L1 decides whether a measurement sample is larger than threshold then L3 filtering question may not need to be discussed.
- Samsung think that RAN1 left to RAN2 to conclude on what the channel occupancy will be. Huawei think that L1 will provide the samples and L3 will apply the threshold. Ericsson think it doesn't matter, we just need to define it.
- Nokia the agreement last time is that occupancy is the timer above a threshold. Could leave it to UE implementation.
- Qualcomm think that the L1 samples provided to L3 and used for RSSI are different from the L1 samples for channel occupancy. Huawei think that there is only one L1 sample used for both. Samsung agree with Huawei and think that the L1 duration can be configured by the eNB. Motorola agree with Huawei. ZTE agree with Qualcomm

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P7
- Ericsson don't think that event triggered reporting is needed.
- Qualcomm think we can have a very simple one shot measurement to detect is a channel is vacant. Prefer not to have periodic measurements. MediaTek agree with Ericsson and Qualcomm. Huawei agree. Motorola support one shot.
- Huawei think that periodic can be useful.
- Samsung support one shot.
- ZTE think eNB should be able to configure multiple reports. Sony prefer periodical reporting.

Agreements
1: Average RSSI over a L3 averaging window is a mean of all measurements from L1.
1a Channel occupancy is calculated over the same L3 averaging window.
1b UE always reports both Average RSSI and Channel occupancy together.
2 Timing configuration for average RSSI measurement and channel occupancy are the same.
3: Average RSSI and channel occupancy measurement timing configuration is configured via RRC signalling.
4: Average RSSI and channel occupancy measurement timing configuration is configured per frequency (i.e. measurement object). Can be configured for serving and non-serving carriers.
5: The eNB configures, L1 duration, and L3 averaging window to determine RSSI measurement timing configuration.
7: Support periodic reporting with amount of reporting configurable by the eNB.

FFS Details of the time domain pattern of the measurement durations (e.g. offset, periodicity, etc)
FFS Whether the channel occupancy is calculated on the same L1 samples used for average RSSI or whether more frequent L1 samples are used.

R2-154641 RSSI histogram reporting for LAA Ericsson discussion
- ETRI support multiple thresholds. In 802.11 several thresholds are used for different purposes.
- Intel ask how multiple threshold is relevant when LBT is performed in eNB. Ericsson explain it is to judge how strong the interference will be. Samsung think the strength can be determined by the RSSI. Ericsson explain that a close node with infrequent transmission will not affect the RSSI.
- BlackBerry think channel selection anyway needs to be performed by averaging reports from many UEs.
- ALU seem some benefits, but don't see that many bins are useful.
- Huawei don't see the need for many threshold
- Ericsson can accept a single threshold

=> Single threshold for channel occupancy.
=> Noted

R2-154642 Introducing RSSI in for LAA Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_LAA-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154137 RSSI measurements China Mobile Com. Corporation discussion
R2-154145 Discussion on RSSI Reporting Guangdong OPPO Mobile Telecom. discussion
R2-154266 RSSI Measurement in LAA Huawei, HiSilicon discussion
R2-154303 RSSI measurement for hidden node detection ETRI discussion
R2-154362 Further Discussion on RRM and RSSI Measurements for LAA Scell ZTE Corporation discussion
R2-154445 Discussion on RSSI measurement reporting HTC Corporation discussion
R2-154472 Channel selection based on RSSI measurement LG Electronics Inc. discussion
R2-154501 Measurement configurations for LAA Sharp discussion
R2-154688 Measurement report mechanisms for RSSI Kyocera discussion
R2-154727 RSSI channel occupancy measurement for LAA Samsung Telecommunications other
wrong Type used; it should be type discussion
R2-154755 RSSI measurement for LAA Motorola Mobility UK Ltd. discussion

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R2-154847 RSSI measurement timing configuration NTT DOCOMO, INC. discussion
Above 13 Tdocs not treated

RSRP/RSRQ - missing/outdated measurements, L3 filtering, TTT, etc

R2-154660 Layer3 filtering behaviour in LAA NTT DOCOMO INC. discussion
=> Noted
R2-154644 Layer-3 filtering for LAA Ericsson discussion

Discussion of 2 papers above:
- Nokia ask if we have a requirement that UE has to measure in all occasions.
- Intel think that DRS may not be transmitted when UE attempts to measure and hence a measurement is not available.
- Ericsson think we have a reference sample rate but no hard requirement on UE implementation.
- BlackBerry think the sample rate today is determined by the DRX cycle.
- Huawei think the Ericsson is aligned with existing specification. Samsung also agrees and think the only different is that the sample rate is variable.
- Qualcomm agree that today there is some mechanism today to adapt the filter but in LAA we can have very long gaps. So prefer the DCM proposal which limits how long a sample can be used.
- Interdigital have a preference for the DCM proposal.
- MediaTek think that both approaches could be used.
- Broadcom think that channel being reported falsely can lead to a more traffic being added and impact other users.
- Ericsson think doing both make sense.
- Intel think the coefficient can be adjusted. If the time duration is large then he impact of the previous result will be very low and in effect the same as resetting.
- ZTE ok with both and that adapting coefficient can be left to implementation
- Broadcom have concern to leave adjusting the coefficient to implementation. Huawei think the UE must still correctly follow the filter behaviour so it is not fully to implementation.
- DCM think the time limit gives some safety for the operator.
- Intel summary of offline discussion: 1st view that L3 reset may avoid impact to measurement reporting event triggering. 2nd view that we just modify the measurement reporting and event triggering by ignoring the outdated results.
- Huawei think the L3 resent will still have impact to measurement reporting and event triggering

Agreements
=> The UE adapts the filter coefficient to adapt to missed measurements (no additional configurable parameters provided for this)
=> FFS: UE resets the filter when it was last updated more than a configurable time ago.

✉ **=> Email discussion on L3 reset vs modifying the measurement reporting and event triggering an TTT handling (Intel). Outcome: Email report to the next meeting.**

R2-154292 RRM measurement for LAA Intel Corporation discussion
Not treated
R2-154643 Time To Trigger for LAAEricsson discussion
- Huawei ask how this works if we have L3 filter reset. Ericsson think the counter would also be reset.
- DCM proposal was to abort the TTT in this case when the L3 filter is reset.
- Qualcomm think this is related to the email discussion.
- Nokia think that TTT is not that closely related to the L3 filter handling.

=> Include TTT handling in email discussion
=> Noted

Proposal 1 For an LAA carrier, the UE triggers a measurement report if an event has been fulfilled while a configurable number of valid samples have been made.

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Proposal 2 If the UE uses another sampling rate than the reference sampling rate (200 ms), then it is left to the UE to modify the signalled number of samples to compensate for the actual used sampling rate.

R2-154118 RRM measurements for LAA cell CATT discussion
R2-154135 Remaining issues related to RRM measurements China Mobile Com. Corporation discussion
R2-154265 Measurement Reporting in the Absence of DRS Transmission Huawei, HiSilicon discussion
R2-154753 RSRP measurement for LAA Motorola Mobility discussion
R2-154845 Further considerations on RRM for LAA QUALCOMM CDMA Technologies discussion
Above 5 Tdocs not treated

Other

R2-154332 Measurement objects for LAA SAMSUNG Electronics Co., Ltd. discussion
- Ericsson think that P2 can be discussed in RAN1. Huawei think we don't need to discuss P2. Intel wonder if P2 has impact on RAN2.

=> RAN2 assume that RAN4 will define EARFCNs so RAN2 specs can reuse current signalling to identify unlicensed bands.

R2-154180 Discussion on LAA measurement issues Guangdong OPPO Mobile Telecom. discussion
R2-154363 Further Discussion on Radio Link Adaptation Issues for LAA Scell ZTE Corporation discussion
R2-154376 Discussion on Configuring UE Measurement Report ITRI discussion
R2-154582 LAA Measurements and Carrier Selection Procedure Sony discussion
revised to R2-154885
R2-154885 LAA Measurements and Carrier Selection Procedure Sony discussion
revision of R2-154582
Above 5 Tdocs not treated

7.1.3 Other

R2-154808 RRC impact analysis for LAA cell Huawei, HiSilicon discussion
P2
- Qualcomm think it is too early to conclude in capability. Nokia agree, there may be some regional specific aspect which we don't know yet. There may be some sub features that we don't know yet. The band could indicate support of the mandatory features.
- Intel think this can be baseline and other capabilties can be consider

=> Reuse SCell configuration (RadioResourceConfigCommonSCell-r10 and RadioResourceConfigDedicatedSCell-r10) to configure LAA cell.
=> Support of LAA will required indication of the unlicensed band in the band info (FreqBandIndicator) in SupportedBandCombination (other capabilities are FFS).
=> Prepare a draft CR to 36.331 to capture the agreements from this meeting.
✉ **Email discussion of draft CR. Outcome: Endorsed CR submitted to next meeting. (Huawei, Yi)**

R2-154370 Extending the IDC framework for LAA Samsung R&D Institute UK discussion
- Broadcom think autonomous doesn't aid co-existence. The gap should be mutually agreed with the eNB so the eNB knows when the UE is not available.
- BlackBerry has some sympathy. WiFi background scanning is continuous and IDC was not really defined for this purpose. Maybe better to perform scanning in measurement gaps.
- Huawei think from the WID we don't need to do anything for IDC. The measurement gap can handle this.
- Ericsson think this is should not use IDC as it is more about sharing resources in the UE.
- Intel think this is supported based on the study item.
- Samsung clarify that the purpose is to relax UE requirements so the UE can perform WiFi scanning it needs to instead of using the gap. Samsung assume active scanning where UE must transmit as well as receive. The purpose is to allow scanning without changing WiFi behaviour. Ericsson think that the UE can scan a few channels per gap. BlackBerry think that longer gap is needed as beacon period is 100ms.

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- BlackBerry clarify that gaps can be used but they would need to be longer than 6ms.
- Broadcom: Even though it avoids impact to WiFi implementation it is inefficient in use of the unlicensed channel.
- Nokia: When we discussed IDC previously we did not discuss this kind of use.

=> Noted

R2-154119 Deactivation timer for LAA CATT discussion
- Ericsson think we discussed this before. If we change anything we should have a timer per SCell.
- Samsung agree to Ericsson that if anything is needed we should have per SCell.
- DCM agree with Ericsson as MAC does not consider the frequency band.
- Broadcom think that timer may not need to track the activity on the unlicensed SCell. The eNB can deactivate the SCell using the MAC CE.
- Huawei think that the real usable time is the same of the licensed. If eNB doesn't want the UE to deactivate then it can schedule the UE. And if channel is really loaded and can't be scheduled it doesn't matter.
- BlackBerry thinks the issue only happens if LBT gets no access to the channel for the fully duration of the timer.
- Intel think that it is not so important. Nokia agree.

=> Noted

R2-154476 Discussion on LAA SCell Activation and Deactivation KT Corporation discussion
R2-154795 LAA SCell Activation and Deactivation Samsung Telecommunications discussion
R2-154374 Study on Activation and Deactivation for LAA III discussion
R2-154267 RAN2 impact of LAA sub-frame design optionsHuawei, HiSilicon discussion
R2-154304 Discussion on LBT category 4 ETRI discussion
R2-154756 Reducing DRX Active Time in LAA Motorola Mobility UK Ltd. discussion
R2-154413 UL Issues for LAA Scell ZTE Corporation discussion
R2-154418 LCP Modification for LAA Scell ZTE Corporation discussion
R2-154650 Update to DRX Behavior in support of Asynchronous UL HARQ INTERDIGITAL COMMUNICATIONS discussion
Above 9 Tdocs not treated

7.2 WI: CA enhancements

(LTE_CA_enh_b5C-Core, leading WG: RAN1, started: Dec. 14, target: Dec. 15, WID: RP-150771)

Time budget: 1 TU (+ 1TU for stage-3 UP aspects)

7.2.1 Organizational

Incoming LSs

R2-154007 LS on RAN1 agreements on CA Enhancement Beyond 5 Carriers (R1-155011; contact: Nokia Networks) RAN1 LS in to: RAN2 Rel-13 LTE_CA_enh_b5C-Core

=> Noted

R2-154011 LS on activation time for PUCCH SCell (R4-155134; contact: NTT DOCOMO) RAN4 LS in to: RAN2 Rel-13 LTE_CA_enh_b5C-Core
- DCM explain the current CR already captures necessary requirements and nothing more to do.

=> Noted

Running CRs

Technically endorsed 36.300 CR after RAN2-91: R2-153963

Technically endorsed 36.321CR after RAN2-91: R2-153964

Technically endorsed 36.331CR after RAN2-91: R2-153946

Withdrawn:

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R2-154316 Introduction of enhanced CA in PDCP LG Electronics Inc. CR 36.323 12.4.0 B Rel-13 LTE_CA_enh_b5C-Core

7.2.2 CP and common aspects

7.2.2.1 B5C

E.g. Capability signalling; RRC configuration; …

Including output of [91#21][LTE/CAfe] Capability signalling enhancements (Nokia Networks)

Stage 2 CR

R2-154456 36.300 CR for capturing B5C and PUCCH on SCell Nokia Networks, NTT DOCOMO, INC. draftCR 36.300 13.1.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec number used in CR cover; it should be 13.1.0
- Ericsson ask if the restriction that it can only be applies without DC been agreed. Nokia explain this is their understanding of the RAN1 LS. LG explain the agreed 36.302 CR already has this restriction.

=> Offline discussion of editorial comments
=> Revision in R2-154982 for editorials and any updates from later decisions.

R2-154982 36.300 CR for capturing B5C and PUCCH on SCell Nokia Networks, NTT DOCOMO, INC. draftCR 36.300 13.1.0 B Rel-13 LTE_CA_enh_b5C-Core
=> Endorsed as running CR.

R2-154905 Running 36.300 CR to capture agreements on carrier aggregation enhancements Nokia Networks draftCR 36.300 12.7.0 B revision of endorsed running CR in R2-153963 Rel-13 LTE_CA_enh_b5C-Core
=> Endorsed

UE Capabilities

R2-154250 Report of [91#21][LTE/CAfe] Capability signalling enhancements Nokia Networks report related to email discussion [91#20]; late revised to R2-154895

R2-154895 Report of [91#21][LTE/CAfe] Capability signalling enhancements Nokia Networks report related to email discussion [91#21] Rel-13 LTE_CA_enh_b5C-Core
revision of R2-154250
- Huawei suggest to focus on methods that only impact RAN2.
- Intel clarify their proposal is to decouple uplink and downlink as currently the UE needs to duplicate downlink many times for different uplink capabilities. Nokia think it may be treated separately. Intel explain the gain is due to the change in signalling structure and not due to how much common capability between the band combinations.

Group D
- Huawei think network should be able to request maximum number of carriers
- Options proposed:
  - Measurement gap capabilities (request only for specific bands)
  - RAT specific gap capabilities (request only for specific RATs and bands)
  - Max number of CCs
  - Network can request whether the UE reports with legacy or new IEs. (new eNB can covert to legacy format)
  - Bandwidth combination set
- Huawei not sure that the gap capabilities will help reduce signalling that much. Ericsson think this is one of the biggest items as it is currently a 64bit bitmap.
- Samsung this that the gap capabilities may not be needed if the number bands and combinations can be limited. Intel agree. Max CC can be the first priority.
- Nokia for RAT specific gap capabilities may have impact to UTRA specs, etc. Ericsson clarify it is only referring to the RRC coded measurement capabilities.
- Huawei think that gap capabilities may have some backward compatibility issues. Ericsson think we need to consider this for all solutions. Ericsson think the number of bands combinations is fixed but the number of parameters per combination should be limited.
- Nokia think max CC may be easiest and also not have backward compatibility issues as the format is the same.

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- Qualcomm think there is interaction with other solutions such as index to the RAN4 CA combination table. Huawei think the index approach may not help as the capabilities of each band still need to be provided.
- Intel think the index to RAN table looks simple but not sure how future proof it is. Qualcomm think that as we go beyond 5CC the number of combinations supported per operator is small. Ericsson think RAN4 may not use this approach in future.
- Intel think what we index to RAN tables depends on other solutions.

Agreements	
1	Introduce some extension to the network request mechanism
1a	Network can request maximum number of DL CCs and maximum number of UL CCs (minimum number will need to be agreed considering backward compatibility issues)
1b	Network can request supported indexes (only if we also agree index reporting)
1c	FFS Network can request whether the UE reports using new format or legacy format
2	We will send an LS to RAN4 to ask if the index to their band combination tables is feasible.

=> Draft LS to RAN4 to ask if the index to their band combination tables is feasible. R2-154983 (Nokia)
=> Offline discussion to continue to find agreeable solutions (Nokia, Tero)
=> Email discussion to select from the solutions so far proposed (no new solutions). Scope of email to be concluded after offline discussion.
- Nokia gives update on offline discussion. Agreed to create stage 3 CR on agreements so far. Email discussion for the CR. Companies can still propose more approaches based on the CR. Several companies thought it useful for the eNB to request specific capabilities (e.g. MIMO capabilities, NAICS capabilities, etc) to be reported. There was also interest in fallback support.
- Vodafone think we need to consider the capability request more. This will require additional coordination across the network.
- Huawei think the capability request can be considered as a proposal in the next meeting. One aspect to be considered is to ensure backward compatibility.
- Intel think the eNB could request whether it wants subset information. Prefer this is discussed in the next meeting and not in the stage 3 CR.
- DCM think baseline for the fallback is that UE indicates just one combination with max carriers in UL and DL. If there are different capabilities for lower number of carriers then it can be discussed on top.
- Qualcomm think the fallback solution is acceptable but there is still the question whether the network can request the fallback.

=> Noted

✉ **=> Email discussion on a baseline CR include the mechanisms agreed so far. Intended outcome: Agreeable CR for next meeting and for use as basis for discussion on other proposals. Details of fallback solution can also be discussed and if agreeable then it can also be included in the baseline CR. (Nokia)**

R2-154983 Draft LS to RAN4 on Capability signalling enhancements (to: RAN4; cc: -; contact: Nokia Networks) Nokia Networks LS out Rel-13 LTE_CA_enh_b5C-Core
=> Remove the sentence " This has been shown to reduce number of bits required for indicating the supported band combinations in capability signalling "
=> Approved LS in R2-155006

R2-154293 Discussion on UE capability signaling for B5C Intel Corporation discussion
R2-154340 UE CA capability signalling for B5C Huawei, HiSilicon discussion
R2-154759 Capability signalling for more than 5 carriers Ericsson discussion
R2-154732 UE capability size reduction Samsung Telecommunications other
wrong Type used; it should be type discussion
Above 4 Tdocs not treated

C-RNTI collision

R2-154404 Discussion on C-RNTI handling for CA beyond 5CCs NTT DOCOMO INC. discussion
revision of R2-153574

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=> Noted

R2-154672 On CRNTI collisions Ericsson discussion

=> Noted

R2-154423 C-RNTI collision problem in Rel-13 CA enhancements Samsung Telecommunications discussion

=> Noted

Discussion of 3 contributions above:

- DCM concerned that MTC UEs might consume a lot of C-RNTIs. Also not sure that cross carrier scheduling can address this as it is optional. Also concerned that cross carrier scheduling is not a good solution for unlicensed band due to LBT.
- LG think many MTC UEs will not be in connected. DCM agree but if the number of UEs is increased then the number of connected UEs is increased.
- Huawei not convinced of the scenario. Don't think it is a problem to be solved.
- Nokia think there is a C-RNTI limit and an eNB implementation limit which is much less than the C-RNTI limit. In R8 the assumption was about 500 connected UEs per eNB.

=> Dedicated C-RNTIs will not be introduced.

Other

R2-154592 Dual connectivity with 32 CCs Nokia Networks discussion

- Ericsson support the proposal. Huawei also support the proposal. DCM are ok to have this but would like to see the capability signalling.
- Samsung would like to see the exact spec impact. LG think we might need to add a new PHR. We need to study the impact more.
- Samsung think that this may not be easily achieved. LS we have spent many hours to address PHR in DC. May not be possible considering the completion date.
- NEC are ok to make this enhancement but think it will be better to complete this WI and enhance om R14.
- Nokia think the MAC changes are easy. For RRC there may be a bit more to change. UE capability signalling may be the biggest issue. LG think the MAC changes may not be so easy to agree.

=> Noted

Stage 3 CR

R2-154458 RRC CR open items Nokia Networks other

wrong Type used; it should be type discussion

- DCM suggest to consider ulPowerControlCommon which is currently included in broadcast signalling but can only be used when UE is configured with CA. Could be introduced in dedicated signalling. Huawei think it must still be broadcast for legacy UEs.
- DCM ask if we should consider possible extension to more than 2 PUCCH groups in future release. Nokia think if it is done in future then it might have more impact than just this field. LG think it would at least have impact on PHR format.

=> Noted

Agreements

1 Introduce RLC AM SN length configuration. FFS whether independent configuration for UL and DL

3 Keep measReulstServFreqExt-r13 as in the technically endorsed CR.

4: Use RSRQ with full value ranges

6: Keep crossCarrierSchedulingConfig as it is in technically endorsed CR

7: Define NW limitation not to include crossCarrierSchedulingConfig r10 and r13 versions for same serving cell (NOTE: not implemented in the CR).

8: Make R13 versions of IEs as proposed in the contribution (details FFS pending input from RAN1 on parameters)

9: Simplify PUCCH mapping signalling by indicating whether SCell is used for sending PUCCH feedback signaling.

10: Additions corresponding to the user plane agreements also need to be added. Details to be concluded offline.

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R2-154468 Configuration for cross-carrier scheduling for Rel-13 UEs Samsung Telecommunications discussion
- Samsung clarify that the intention is that it is possible to configure a R13 UE with the explicit mechanism even if less than 5 CC is configured. This is already addressed in the CR.

=> Noted

R2-154457 Running 36.331 CR for capturing B5C and PUCCH on Scell Nokia Networks draftCR 36.331 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
CR & rev number should be removed in CR cover; wrong spec version number used in CR cover: it should be 12.7.0
=> Revision to include agreements from this meeting
=> Revision in R2-154984

R2-154984 Running 36.331 CR for capturing B5C and PUCCH on Scell Nokia Networks draftCR 36.331 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
- Nokia indicate that RAN1 will provide L1 parameters after this meeting.
- LG think dsr-transMax in the CR is not aligned with the UP session and would like to discuss more in the next meeting. Nokia agree. It may be possible to do it in a different way.

=> FFS to be added re dsr-TransMax
=> Postponed

✉ **Email discussion on the running CR and discussion of the RAN1 parameters when informatrion is provided. Intended outcome an endorsed running CR submitted to next meeting. (Nokia)**

7.2.2.2 PUCCH on SCell

E.g. RRC configuration, …

PUCCH SCell reconfigurations

R2-154124 PUCCH SCell change CATT discussion
- Ericsson think the simplest is to do release/add. LG think that we already agreed to use reconfiguration and we can keep the agreement. DCM think we can rely on release/add. CATT think it is not an optimisation as we previously agreed.
- Huawei think the real issue is in UP. There is some ambiguity in the configuration of the deactivation timer if we modify.
- Nokia think it is simpler to do release/add, or the network can deactivate before reconfiguring. Can go either way.
- NEC agree with Nokia to do release/add. Qualcomm prefer release/add. Intel also support this.
- Nokia clarify that the current CR supports release/add.
- LG think we previously agreed that the activation status is not changed by PUCCH reconfiguration. With this agreement that will no longer hold. Ericsson agree that this is no longer applicable.

=> Agree to use release/add and not introduce modification.
=> Configure PUCCHConfigCommonSCell and PUCCHConfigDedicatedSCell are provided only for a PUCCH SCell.

R2-154341 PUCCH SCell configuration and de-configuration Huawei, HiSilicon discussion
- Discussed together with previous one.

=> Noted

R2-154731 Change of PUCCH SCell Samsung discussion
=> Not treated. Covered by previous disussion.

7.2.3 UP aspects

Stage-3 UP aspects

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R2-154910 Running MAC CR for Carrier Aggregation enhancements Ericsson
- LG suggest the note on scheduling request should be as discussed in the UP session, and can then be discussed more in the email.
- Nokia think everyone agrees on the functionality. Could we remove the note. LG agree it can be discussed.
- CATT think the note is needed and it can be discussion on email how it can be clarified.

=> Version used to start email discussion the note will be changed to original wording.
=> Postponed
✉ **Email discussion. Intended outcome is an endorsed CR to be submitted to the next meeting. The wording of the note will be discussed. (Ericsson)**

7.2.3.1 B5C

The documents in this AI treated in the LTE UP session. (see Anne G)

E.g. Header formats, …

R2-154125 LCID for Activation/deactivation MAC CE CATT discussion
R2-154185 New LCID(s) for activation command and extended PHR MAC CE Huawei, HiSilicon discussion
R2-154320 LCID for PHR and A/D MAC CE LG Electronics Inc. discussion
R2-154326 Size of extended PDCP SN SAMSUNG Electronics Co., Ltd. discussion
R2-154327 Extension of L field in the MAC header SAMSUNG Electronics Co., Ltd. discussion
R2-154328 Extended L field in MAC subheader SAMSUNG Electronics Co., Ltd. draftCR 36.321 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154329 Signaling support for Extended L field in MAC subheader SAMSUNG Electronics Co., Ltd. draftCR 36.331 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154330 Necessity of UM RLC SN extension SAMSUNG Electronics Co., Ltd. discussion
R2-154331 Combination of extended L2 headers SAMSUNG Electronics Co., Ltd. discussion
R2-154342 Further discussion on extension of L field in MAC PDU Huawei, HiSilicon discussion
R2-154343 Discussion on extension of UM RLC SN Huawei, HiSilicon discussion
R2-154347 Correction on extended PHR2 format Samsung Electronics Co., Ltd pCR 36.321 Rel-13 LTE_CA_enh_b5C-Core
wrong Type used; it should be "draftCR"
R2-154348 Remaining issues on extended PHR2 Samsung Electronics Co., Ltd discussion
R2-154403 Running RLC CR on extension of protocol formats NTT DOCOMO INC., Nokia Networks (rapporteurs) draftCR 36.322 12.3.0 B Rel-13 LTE_CA_enh_b5C-Core
R2-154405 Configuration of extended L2 header NTT DOCOMO INC. discussion
R2-154406 Handling of huge PDCP control PDU NTT DOCOMO INC. discussion
R2-154419 Introducing the LCID for new A/D MAC CE Samsung Telecommunications draftCR 36.321 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154420 On introducing the LCID for new A/D MAC CE Samsung Telecommunications discussion
R2-154593 PDCP Status PDU with PDCP SN extension Nokia Networks discussion
R2-154639 LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs Ericsson discussion
R2-154673 Open issues on L2 UP headers extension Ericsson discussion
R2-154674 Extending MAC protocol header Ericsson draftCR 36.321 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154675 Extending RLC protocol header Ericsson draftCR 36.322 12.2.0 B Rel-13 LTE_CA_enh_b5C-Core
R2-154676 Extending PDCP protocol header Ericsson draftCR 36.323 12.4.0 B Rel-13 LTE_CA_enh_b5C-Core
R2-154748 LCIDs for Act/Deact and PHR MAC CEs Nokia Networks discussion

R2-154410 Introduction of enhanced CA in PDCP LG Electronics Inc. draftCR 36.323 12.4.0 B Rel-13 LTE_CA_enh_b5C-Core
[moved from 7.2.1 to 7.2.3.1]

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Withdrawn:
R2-154136 Usage of new LCID(s) or not for Rel-13 extended PHR MAC CE Huawei, HiSilicon discussion
R2-154139 Usage of new LCID or not for the 4 bytes A/D MAC CE Huawei, HiSilicon discussion

7.2.3.2 PUCCH on SCell

The documents in this AI treated in the LTE UP session. (see Anne G)

R2-154126 Clarification on valid PUCCH SR resource CATT discussion
R2-154127 Clarification on A/N feedback for DL transmission CATT discussion
R2-154324 sCellDeactivationTimer handling upon PUCCH release LG Electronics Inc. discussion
R2-154408 Condition to include Type2 RHNTT DOCOMO INC. discussion
R2-154451 Discussion on sCellDeactivationTiemr HTC Corporation discussion
R2-154463 Clarification on SR prohibit timer NEC Corporation discussion
R2-154492 Introduction of PUCCH on SCell in CA NTT DOCOMO INC. draftCR 36.302 12.5.0 B Rel-13 LTE_CA_enh_b5C-Core
R2-154594 Type 2 PH reporting with PUCCH on Scell Nokia Networks discussion
R2-154640 Valid SR resources Ericsson discussion
R2-154827 Remaining issues on SR on PUCCH SCell Sharp discussion
[moved from 7.2.2.2 to 7.2.3.2.]

Withdrawn:
R2-154402 Introduction of PUCCH on SCell in CA NTT DOCOMO INC. CR 36.302 12.5.0 B Rel-13 LTE_CA_enh_b5C-Core

7.3 WI: Single-Cell point-to-multipoint transmission

(LTE_SC_PTM-Core, leading WG: RAN2, started: June 15, target: Dec 15, WID: RP-151110)

Time budget: 1 TU

Documents in this agenda item handled in the LTE Break Out session (see Annex I)

The approved TR 36.890 is available here.

7.3.1 Organizational

Incoming LSs

Running CRs

Technically endorsed 36.300 CR after RAN2-91: R2-153889

R2-154199 Introduction of SC-PTM in 36.300 Huawei, HiSilicon draftCR 36.300 13.1.0 B Rel-13 LTE_SC_PTM-Core
wrong spec version number used in CR cover
R2-154200 Introduction of SC-PTM in 36.331 Huawei, HiSilicon draftCR 36.331 12.7.0 Rel-13 LTE_SC_PTM-Core
late; wrong spec ver number used in CR cover; it should be 12.7.0
R2-154201 Introduction of SC-PTM in 36.321 Huawei, HiSilicon draftCR 36.321 12.7.0 B Rel-13 LTE_SC_PTM-Core
wrong spec ver number used in CR cover; it should be 12.7.0

7.3.2 SC-PTM Configuration and Operation

Including output of [91#22][LTE/SC-PTM] Scheduling pattern, DRX and Change Notification (Huawei)

R2-154195 Summary of email discussion: [91#22][LTE/SC-PTM] Scheduling pattern, DRX and Change Notification Huawei (Rapporteur) report related to email discussion [91#22]
late

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R2-154130 UP issues of SC-PTM ZTE Corporation discussion
revised to R2-154879
R2-154879 UP issues of SC-PTM ZTE Corporation discussion
revision of R2-154130
R2-154197 L2 aspects of SC-PTM Huawei, HiSilicon discussion
R2-154474 SC-PTM MTCH reception LG Electronics Inc. discussion
R2-154475 SC-PTM MCCH reception LG Electronics Inc. discussion
R2-154551 SC-PTM Configuration Qualcomm Incorporated discussion
R2-154658 Multiplexing options in SC-PTM configuration NEC discussion
R2-154662 ROHC and ciphering for SC-PTM NEC discussion

7.3.3 Service Continuity

Including output of [91#23][LTE/SC-PTM] Service continuity (Huawei)

R2-154196 Summary of email discussion: [91#23][LTE/SC-PTM] Service continuity Huawei (Rapporteur)
report related to email discussion [91#23]
late

R2-154131 SC-PTM Service Continuity ZTE Corporation discussion
R2-154164 SC-PTM Service Continuity solution TD Tech Ltd discussion
R2-154473 SC-PTM service continuity in RRC CONNECTED LG Electronics Inc. discussion
R2-154553 SC-PTM Service Continuity Qualcomm Incorporated discussion
R2-154560 SC-PTM counting mechanism Potevio Company Limited discussion
R2-154693 Service continuity with SC-PTM Kyocera discussion

7.3.4 Other

R2-154198 SC-PTM UE capability Huawei, HiSilicon discussion

7.4 WI: Further LTE Physical Layer Enhancements for MTC

(LTE_MTCe2_L1-Core, leading WG: RAN1, started: Sep. 14, target: Dec. 15, WID: RP-150492)

Time budget: 2 TU

7.4.1 Organizational

Incoming LSs

R2-154026 LS on RRC parameters for LTE eMTC (R1-154885; contact: Ericsson) RAN1 LS in
to: RAN2 Rel-13 LTE_MTCe2_L1-Core
=> Noted

Running CR

The technically endorsed running 36.300 CR from RAN2-91 is available in R2-153967.

R2-154655 RRC details for Rel-13 low complexity UEs and coverage enhancements Ericsson
discussion
- Huawei think we previously agreed to use the same structure. It generates more maintenance effort if we change something in both structure. If the saving is not so much then we prefer not to change. Samsung understand that the previous agreement was to keep a common track. But agree there is some overhead but maybe should consider not using only for narrowband to keep one track.

=> Offline discussion to conclude way forward for drafting RRC CR. Revised to R2-154904
=> Noted

R2-154904 RRC details for Rel-13 low complexity UEs and coverage enhancements Ericsson
discussion

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- Samsung understand that SIB1 and scheduling info would not use the extension marker. The overhead would only happen if we add a new MTC SIB

=> Noted

=> Will be concluded during email review of the 36.331 CR. This aspect should be concluded in the early as possible in the email discussion.

✉ **Email discussion of running CR to 36.331 on MTC. Intended outcome if endorsed running CR to next meeting (Ericsson)**

✉ **Email discussion of running stage 2 CR to 36.300 on MTC. Intended outcome is endorsed running CR to next meeting (Ericsson) and agreed LS to RAN1 to inform of agreements on MTC (R2-154900). 2 weeks.**

✉ **Email discussion of running CR to 36.321 on MTC. Intended outcome if endorsed running CR to next meeting (Ericsson)**

✉ **Email discussion of running CR to 36.304 on MTC. Intended outcome if endorsed running CR to next meeting (Huawei)**

✉ **Email discussion on remaining system information aspects of MTC. Intended outcome is email discussion report to next meeting (Intel)**

Withdrawn:

R2-154653 RRC details for Rel-13 low complexity UEs and coverage enhancements Ericsson GmbH, Eurolab discussion

7.4.2 SIB

SIB scheduling

R2-154786 SIB scheduling for Rel-13 low complexity and coverage enhanced Ues Ericsson discussion

- Ericsson gives summary of offline: Discussed scheduling of SIB1 (fixed or provided in MIB). Discussion ongoing in RAN1 where they discuss a table which would include a limited number of cases that would map to all necessary information. RAN2 can discuss TBS sizes required and periodicity.

P1

- LG think that there will be impact on ETWS/CMAS is the UE doesn't receive SIB1bis in first window. Ericsson think enough repetitions must be included in each cycle so a LC UE in NC can acquire successful.
- Panasonic ask if this applies irrespective if EC level?
- Intel think the preference form the discussion is that the UE knows when to start combining. Could be defined in the spec. From this it will be known where the network may change SIB.
- Intel explain that the UE need know which windows can be combined.
- DCM think the modification period is independent of the EC level.
- Huawei think we have 4 repetition in an 80ms SI window which may not be enough for LC UE. Prefer to increase from 80ms to a larger value. LG agree and think the that the network need to repeat within a single window for the worst case EC.
- Qualcomm shares the view of Intel that the UE knows where it can start combining. Can be fixed or signalled. Don't see the need to stick to the 80ms legacy value. Huawei share the same view. CATT share the view.
- Ericsson think if we consider the worst case we might have a limit that SIB1 can only be updated every 2s.
- Huawei think the value could be configurable, eg based on EC level supported in the cell. Panasonic think that the UE would need know what EC level it is. Samsung agree with Huawei
- Ericsson point out that even with 80ms, it will not actually happen frequently.
- DCM and ALU support the Ericsson view.

P3

- Qualcomm: RAN2 needs to agree what TB sizes are suitable from RAN2 point of view and provide as input to RAN1. Intel agree.

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- Ericsson contribution suggest to support up to 1000 bits. Qualcomm wold prefer a small upper bound such as 328 or up to 500. Prefer to limit the padding. Huawei think small than 1000 may be ok but we need to look at the SIB content to decide. Intel think current maximum of SIB1 is about 300 and would prefer to limit size for SIB1 only. Ericsson think we need to remember that some extra content may be added to SIB1.
- Gemalto support the view of Intel as there are many cases where UE just needs to read SIB1. LG agree. Sierra agree for small SIB1. CATT suggest take current SIB1 as a baseline. Samsung have the same view.
- Ericsson think we should not forget LC UEs in NC. Some network may not want to support EC. If supporting EC then probably a smaller value will be configured.
- Nokia would like to limit SIB1 size but have to consider some scope for extension.

P6
- Qualcomm ok with the upper values but for lower ones it doesn't make sense to have values shorter than for SIB1.

P7
- Huawei think repetition pattern of SI repetitions is for RAN1 to conclude. Intel point out the RAN1 LS suggest that it is explicitly indicated in RAN1.

Agreements	
1	The duration over which the content of SIB1bis cannot change is either a/ fixed in the specification or b/ determined from a table where the index to the table is included in MIB (same index as used by RAN1 to determine TBS, etc) (TBD whether table may be in either RAN1 or RAN2 spec i.e. pointed to by an index in MIB)
2	Maximum SIB1bis size in range of existing SIB 1 plus some extra (Final value and intermediate values is TDB)
3	A new value range of si-WindowLength is defined for Rel-13 LC/CE UEs. Value range is {20, 40, 60, 80, 120, 160, 200} ms. FFS whether larger values might be needed for TDD.
4	The existing value range for the si-Periodicity is used for Rel-13 LC/CE, i.e. {8, 16, 32, 64, 128, 256, 512} radio frames. Larger values than 512 are FFS. si-Periodicity cannot be configured to be less than the SIB1bis periodicity.
5	Confirm current approach where SI windows do not overlap
6	Narrowband region (4bit), f-hopping (1bit), and TBS for SI messages are indicated in schedulingInfoList. (TBS sizes are TBD).

R2-154794 SIB1 scheduling for Rel-13 MTC Samsung Telecommunications discussion
R2-154657 SIB reception across SI-windows for LC/EC MTC UE NTT DOCOMO INC. discussion
R2-154079 Considerations on the open issues for SIB transmission CATT discussion
R2-154278 Scheduling of MTC SIBs in Normal Coverage Sierra Wireless, S.A. discussion
R2-154361 MTC SIB Transmission Huawei, HiSilicon discussion
Above 5 Tdocs not treated

System info update (SI change notification, value tag, validity time)

R2-154818 System Information Modification for LC MTC UEs INTERDIGITAL COMMUNICATIONS other
=> Noted
R2-154433 SI update in Rel-13 eMTC Samsung Telecommunications discussion
=> Noted
Discussion of R2-151443 and R2-154818
- Panasonic ask if we should consider eDRX when we discuss this. For eDRX it is good to page not over the entire DRX period. The M-PDCCH would still need to be transmitted over the entire eDRX which is a waste for the network.
- Ericsson think that for eDRX we should be able to define a formula that does not spread UEs over a smaller set of subframes.
- Intel support the proposal from Interdigital.
- LG support the proposal 1 from Interdigital.
- Samsung think the SI update is not that frequent and if there is a paging record then UE anyway needs to read the paging message.
- Huawei prefer to not discuss eDRX and support the Interdigital proposal. Sierra think it is difficult to separate eDRX case and could be a spread of UEs across subframes.
- Ericsson suggest that we keep the to the agreement from last meeting and wait for RAN1 to say whether or not we have the mechanism. Qualcomm agree.

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- Panasonic update from coffee break discussion. It was acknowledge offline that paging in every occasion consumes resources but network vendors and operators are not too concerned. We can send an LS to RAN1 asking if they can include an indication on ETWS/CMAS and EAB and ask how many M-PDCCH repetitions are needed.

=> RAN2 assumption, for RAN1 to confirm: An IDLE UE mode UE can be notified of a ETWS/CMAS update and/or EAB update (in addition to system info change) using the control channel (M-PDCCH) in the legacy paging occasions.

R2-154787 System information update, valueTag and validity time Ericsson discussion
R2-154181 SIB SystemInfo ValueTag for enhanced storage time Gemalto N.V., Vodafone discussion
R2-154378 System information modification for Release-13 low complexity UEs and enhanced coverage Intel Corporation discussion
R2-154552 System information update for LC-MTC UEs or/and UE in EC mode Nokia Networks other
wrong Type used; it should be type discussion
R2-154858 System Information validity time for eMTC QUALCOMM CDMA Technologies discussion
Above 5 Tdocs not treated

MIB

R2-154785 MIB for Rel-13 low complexity and coverage enhanced Ues Ericsson discussion
Not treated

7.4.3 Random Access

Including output of [91#24][LTE/MTC] Timer handling for extended coverage (Ericsson)

R2-154870 discussion report on [91#24][LTE/MTC] Timer handling for extended coverage Ericsson report
report of email discussion [91#24]
late
=> Noted
P2
- LG think that the timer may need different values per CE level. Huawei think it is reasonable to have a value per CE level. CATT share the same view. Hauwei
- Intel think there could be some defined relation between the broadcast level and the CE level.

Agreements:
1. The following timers are not extended for Rel-13 LC/CE UEs: timeAlignmentTimer, T302, T303, T305, T306, and T325. No updates are needed for the start and stop conditions, and actions that follow the timer expiry for these timers.
2 mac-ContentionResolutionTimer, and T300 value ranges are extended for Rel-13 LC/CE UEs. No updates are needed for the start and stop conditions, and actions that follow the timer expiry for these timers.
2a mac-ContentionResolutionTimer dependent on CE level (TBD whether it is explicitly signalling for implicitly derived from other information.)
2b T300 is provided per cell

=> UE random access behaviour when UE detects a change in CE level can be discussed in future meeting

✉ **-Email discussion on remaining timers. Intended outcome is email report to next meeting (Ericsson)**

R2-154082 Random Access considerations for LC-MTC CATT discussion
R2-154849 Considerations on Random Access for Rel13 eMTC QUALCOMM CDMA Technologies discussion
R2-154311 Further Considerations for RACH Access in Enhanced Coverage FUJITSU LIMITED discussion

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R2-154689 Considerations on RACH for LC-MTC Alcatel-Lucent Telecom Ltd discussion
R2-154337 Consideration on PRACH power ramping Huawei, HiSilicon discussion
R2-154336 Consideration on RACH procedure in coverage enhancement Huawei, HiSilicon discussion
R2-154379 Discussion on open aspects of random access procedure for Release-13 low complexity UEs and enhanced coverageIntel Corporation discussion
R2-154559 Random access procedure for enhanced coverage UEs Nokia Networksother
wrong Type used; it should be type discussion
R2-154773 Remaining open issues for random access INTERDIGITAL COMMUNICATIONS other
R2-154788 Remaining issues on random access for Rel-13 low complexity and enhanced coverage Ues Ericsson discussion
R2-154844 Considerations on RA Response for Rel-13 MTC KT Corp. discussion
Above 11 Tdocs not treated

Withdrawn:
R2-154791 Running 36.321 CR for Rel-13 low complexity UEs and UEs operating coverage enhancements Ericsson draftCR 36.321 B Rel-13 LTE_MTCe2_L1-Core late

7.4.4 Paging

R2-154430 Paging for non-LC UE capable of EC operation Samsung Telecommunications discussion
R2-154182 Paging for normal devices supporting enhanced coverage Gemalto N.V. discussion
R2-154550 Paging of Rel13 low complexity UE and/or UE in EC mode Nokia Networks other
R2-154080 Further considerations on paging for coverage enhancement operation CATT discussion
R2-154360 MTC Paging Transmission Huawei, HiSilicon discussion
R2-154789 Bundling paging messages, CE capability and UE behaviour Ericsson discussion
R2-154431 PF and PO for Rel-13 low complexity MTC Samsung Telecommunications discussion
R2-154447 Open issues for paging LG Electronics Francediscussion
R2-154465 Coverage enhancement information for MTC paging NEC Corporation discussion
R2-154771 Open issues on paging for MTC UE INTERDIGITAL COMMUNICATIONS other
R2-154850 Paging repetition coordination for eMTC QUALCOMM CDMA Technologies discussion
Stage 3

R2-154651 Running RRC CR for Rel-13 low complexity UEs and coverage enhancements Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_MTCe2_L1-Core
Above 12 Tdocs not treated

Withdrawn:
R2-154792 Running 36.304 CR for Rel-13 low complexity UEs and UEs operating coverage enhancements Ericsson draftCR 36.304 B Rel-13 LTE_MTCe2_L1-Core late

7.4.5 Mobility Support

Including output of [91#25][LTE/MTC] Mobility Support (MediaTek)

R2-154784 Report of the email discussion [91#25][LTE/MTCe2] MediaTek Inc. discussion
late; revised to R2-154888
R2-154888 Report of the email discussion [91#25][LTE/MTCe2] MediaTek Inc. discussion
revision of R2-154784
=> Noted
P3B

- Intel ask if below TSINR the UE should be allowed not to reselect to cells that are in same EC level or worse EC level. MediaTek if the current mechanisms cant be used below this threshold then it might be best to leave to UE implementation to keep it simple. Intel would be open to this option. Samsung think Intel proposal is same as legacy. Ericsson think this performance aspect if bast captured and discussed in RAN4. MediaTek think RAN4 haven't given us answer for below TSINR.
- MediaTek suggest we ask RAN4 for more information what is possible below TSINR. Ericsson explain that cell reselection peformance today is specified by test cases and expect the same for this case.

Agreements:

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CELL SELECTION
1: To support S-criteria for EC, define new minimum required levels, QrxlevminCE and QqualminCE instead of the legacy levels, Qrxlevmin and Qqualmin
Srxlev = Qrxlevmeas – (QrxlevminCE + Qrxlevminoffset) – Pcompensation - Qoffsettemp
Squal = Qqualmeas – (QqualminCE + Qqualminoffset) - Qoffsettemp
2:, The UE uses normal mode if the cell is suitable according to legacy/normal S criteria, and otherwise, the UE uses EC mode if the cell is suitable according to EC S criteria.
CELL RESELECTION
3: Intra-frequency Cell reselection and same priority cell reselection is supported by Rel-13 EC UEs.
3a RAN2 assume that RAN4 will handle cases when SINR <TSINR , e.g. by specifying reduced performance or not specifying performance.

FFS: Whether to simplify inter-frequency cell reselection between EC cells, by not using absolute priority cell reselection, but instead rely only on same-priority ranking cell reselection. This can be considered.
FFS: How to prioritise NC cells ober EC cells.

5: In case it is decided to support absolute priority cell reselection between EC cells, the current cell reselection priorities are reused for the EC cells, with additional constraints (details TBD) for the case of cell reselection between EC cells and NC cells.
6: For same priority cell reselection between EC cells, introduce a new parameter TreselectionRAT

CONNECTED MODE
9: Baseline connected mode mobility mechanisms are supported for LC UEs in normal coverage.
10: Baseline connected mode mobility mechanisms are supported for LC UEs in “shallow” enhanced coverage, e.g. for low cost devices that uses EC to overcome coverage issues dues to cost reductions such as single antenna.

14: Existing mechanisms for connected mode mobility apply for LC UEs supporting other RATs. Inbound connected mode mobility to LTE is not supported to EC.
15A: The UE shall trigger Radio Link Failure when the radio link can no longer be maintained. It should be possible for the criteria to reflect the extended coverage level of the cell. (Criteria for RLF detection are FFS)

Connected mobility

R2-154557 RLM/RLF for Rel13 low complexity UE or/and UE in EC mode Nokia Networks other
R2-154851 Connected mode mobility support for Rel.13 eMTC QUALCOMM CDMA Technologies discussion
R2-154758 Connected mode Mobility for LC and CE Ericsson discussion
R2-154556 Connected mobility for Rel13 UEs in EC mode Nokia Networks other
Above 4 Tdocs not treated

Idle mode mobility

R2-154081 Considerations on inter-frequency cell reselection priorities for EC mode CATT discussion
R2-154183 MTC cell re-selection and mobility implications Gemalto N.V. discussion
R2-154338 Mobility Enhancement in eMTC Huawei, HiSilicon discussion
R2-154417 Further discussion on cell selection reselection parameters in EC HTC Corporation discussion
R2-154558 Cell reselection for coverage enhanced UEs Nokia Networks other
R2-154583 Cell Reselection for Enhanced Coverage Sony discussion
Above 6 Tdocs not treated
Withdrawn:
R2-154356 Connected mode mobility enhancement for Rel-13 low complexity and enhanced coverage UEs Spreadtrum Communications discussion

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7.4.6 User Plane aspects

R2-154790 HARQ mechanism for Rel-13 LC and CE Ues Ericsson discussion
R2-154359 Unicast Transmission/Reception Issues for Rel-13 MTC Huawei, HiSilicon discussion
R2-154425 DRX enhancements for Rel-13 low complexity MTC Samsung Telecommunications discussion
R2-154555 Timer handling for LC-MTC UEs or/and UE in EC mode Nokia Networks other
Above 4 Tdocs not treated

7.4.7 Other

R2-154339 Consideration on the simultaneous transmission for MTC Ues Huawei, HiSilicon discussion
R2-154380 Timer impacts for Release-13 low complexity UEs and enhanced coverage Intel Corporation discussion
R2-154428 Overview on the overall procedure in Rel-13 low complexity MTC Samsung Telecommunications discussion
R2-154448 Considerations on coverage enhancement level LG Electronics France discussion
R2-154615 Considerations on EC level change in connected mode CATT discussion
late
Above 5 Tdocs not treated
Withdrawn:
R2-154617 Considerations on EC level change in connected mode CATT discussion

7.5 WI: ProSe enhancements

(LTE_eD2D_Prox-Core, leading WG: RAN2, started: Dec. 14, target: Dec. 15, WID: RP-150441)

Time budget: 3 TU

Documents in this agenda item will be handled in the LTE Break Out session (see Annex H)

Incoming LSs

R2-154004 Reply LS to S2-152699 = R2-153034 on ProSe coarse proximity estimation based on path loss (R1-154871; contact: Intel) RAN1 LS in cc: RAN2 Rel-13 eProSe
R2-154005 LS on eD2D ProSe Per Packet Priority (R1-154876; contact: Qualcomm) RAN1 LS in to: RAN2 Rel-13 LTE_eD2D_Prox-Core
R2-154006 LS on RAN1 agreements at RAN1#82 (R1-155009; contact: Qualcomm) RAN1 LS in to: RAN2 Rel-13 LTE_eD2D_Prox-Core
R2-154010 Reply LS to R1-153553 = R2-152020 on Sidelink measurements for relay UE selection (R4-155129; contact: Qualcomm) RAN4 LS in cc: RAN2 Rel-13 LTE_eD2D_Prox-Core
R2-154024 LS on RRC Parameters for eD2D (R1-154883; contact: Qualcomm) RAN1 LS in to: RAN2 Rel-13 LTE_eD2D_Prox-Core

Running CR

The technically endorsed running 36.300 CR from RAN2-91 is available in R2-153890 (result of [91#16]).

7.5.1 UE-to-Network Relays

7.5.1.1 Relay UE initiation/discovery

Can broadcast discovery resources be used in connected mode? Use of thresholds for relay UEs in connected mode?

R2-154045 Discussion on relay initiation and relay discovery CATT discussion
R2-154162 Introduction of eD2D Ericsson draftCR 36.321 12.7.0 B Rel-13 LTE_eD2D_Prox-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154264 Discussion on remaining issues of relay discovery Shenzhen Coolpad Technologies discussion

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R2-154302 Further considerations on relay UE initiation and release process SHARP Corporation discussion
R2-154441 Behaviour of the UE-to-Network relay LG Electronics Francediscussion
R2-154543 Remaining issues for ProSe UE-to-Network relay procedure Huawei, HiSilicon discussion
R2-154677 Remaining issues of initiation of ProSe UE-to-Network Relays Kyocera discussion
R2-154798 Open Issues of ProSe UE-to-Network relay Qualcomm Incorporated, ZTE, InterDigital, Intel discussion
R2-154811 In-coverage discovery/selection of UE-to-Network relays BlackBerry UK Limited discussion

7.5.1.2 Relay UE selection/re-selection

Including output of email discussion [91#31][LTE/D2D] Relay selection and reselection (Qualcomm)

Selection/reselection terminology and detailed criteria to select a new relay and whether/how to perform the ranking of relays. Is Uu link quality used for selection/reselection purposes?

Discovery ID and interaction with higher layers

R2-154796 Report of email discussion [91#31][LTE/D2D] Relay selection and reselection Qualcomm report

R2-154046 Consideration on relay (re-)selection and resource allocation CATT discussion
R2-154150 Contents of radio layer information in Relay discovery messages Ericsson discussion
R2-154153 Filtering of sidelink measurements Ericsson discussion
R2-154155 Mobility aspects of UE-to-Network RelayingEricsson discussion
R2-154160 Relay selection criteria for public safety discovery Ericsson discussion
R2-154243 Uu Link quality of Remote UE PANASONIC R&D Center Germany discussion
revised to R2-154886
R2-154886 Uu Link quality of Remote UE PANASONIC R&D Center Germany, Qualcomm Incorporated discussion related to email discussion [91#31]
revision of R2-154243
R2-154307 Discussion on trigger condition for relay reselection FUJITSU LIMITED discussion
R2-154308 The remote UE access to relay UE served by one neighbor cell FUJITSU LIMITED discussion
R2-154443 Connection and communication with relay LG Electronics Francediscussion
R2-154571 Relay selection and reselection details LG Electronics Francediscussion
late
R2-154695 Relay UE Selection and Reselection ZTE discussion

7.5.1.3 Connection establishment

AS involvement (UE and/or eNB) with NAS in deciding "when" to switch “allowed traffic” (as determined by higher layers) between Uu and PC5 (if any)

R2-154158 Establishment and release of the PC5 link between the Relay UE and the Remote UE Ericsson discussion
R2-154242 Interruption in PS CommunicationPANASONIC R&D Center Germany discussion
R2-154381 Open aspects of UE-to-Network relay connection establishment Intel Corporation discussion
R2-154444 When to switch data path LG Electronics Francediscussion

7.5.1.4 Other

Resource allocation: what resources are used for communication

One-to-one communication and need for L2 ID collision

Other open issues

R2-154055 Considerations on Layer-2 ID collision CATT discussion
R2-154061 MAC PDU Addressing for Communication with UE-to-Network Relay Samsung Electronics Co., Ltd discussion

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R2-154063 Resource Allocation Aspects for UE-to-Network Relay Samsung Electronics Co., Ltd discussion
R2-154064 Sidelink BSR for Unicast Samsung Electronics Co., Ltd discussion
R2-154161 Handling collisions between communication and discovery resources Ericsson discussion
R2-154245 Missing Packet due to Half-duplex in PC5 CATT discussion
R2-154269 Further Discussion on Resource Allocation Issues and Way Forward for Release 13 Shenzhen Coolpad Technologies discussion
R2-154301 Public safety perspectives on GCSE_LTE latency requirements for evaluating UE-Network Relay solutions U.S. Department of Commerce, Institute for Information Industry (III) discussion
R2-154309 Resource allocation for the remote UE and the relay UE FUJITSU LIMITED discussion
R2-154319 ProSe ID collisionLG Electronics Inc. discussion
R2-154382 Support of one-to-one communication Intel Corporation discussion
R2-154542 Discussion on Inter-frequency UE-to-Network relay Huawei, HiSilicon discussion
R2-154545 L2 impacts of ProSe one-to-one communication Huawei, HiSilicon discussion
R2-154572 Sync Reference UE selection upon Relay Selection LG Electronics Francediscussion
late
R2-154576 Multiple SA transmissions LG Electronics Francediscussion
late
R2-154678 Consideration of bearer mapping for ProSe UE-to-Network Relays Kyocera discussion
R2-154696 Considerations on the ProSe Layer-2 ID conflict issue ZTE discussion
R2-154721 Layer-2 ID conflict issues for ProSe one-to-one communication ETRI discussion

7.5.2 ProSe discovery in partial- and outside network coverage

RAN2 aspects of supporting out-of-coverage discovery

R2-154048 Discussion on ProSe Discovery in Partial and Outside Network Coverage CATT discussion
R2-154056 RAN2 Aspects of ProSe Discovery in Partial & OOC Samsung Electronics Co., Ltd discussion
R2-154151 Differentiation between PS discovery and non-PS discovery Ericsson discussion
R2-154152 Direct Discovery on non-PCell carriers Ericsson discussion
R2-154157 Out of coverage discovery Ericsson discussion
R2-154383 Support of public safety discovery in OOC Intel Corporation discussion
R2-154574 Discovery out of coverage LG Electronics Francediscussion
late revised to R2-154883
R2-154883 Discovery out of coverage LG Electronics Francediscussion
revision of R2-154574
R2-154697 RAN2 aspects of supporting out-of-coverage discovery ZTE discussion
R2-154760 Partial and Out of Coverage Discovery Qualcomm Incorporated discussion

7.5.3 ProSe discovery for inter-carrier and inter-PLMN

Details of UL subframe gap request report and triggers

R2-154047 Consideration on gap configuration and UE capabilities CATT discussion
R2-154057 Remaining Issues: Gap for Discovery Reception Samsung Electronics Co., Ltd discussion
R2-154058 Remaining Issues: Gap for Discovery Transmission Samsung Electronics Co., Ltd discussion
R2-154059 Remaining Issues: Inter Carrier Discovery Samsung Electronics Co., Ltd discussion
R2-154060 Handling Collisions between Discovery & Communication Samsung Electronics Co., Ltd discussion
R2-154077 the issues on the SIB18 change of the iner-carrier Beijing Xinwei Telecom Techn. discussion
R2-154148 Sidelink gap request for direct discoveryNokia Networks discussion
R2-154156 On D2D gaps Ericsson discussion
R2-154377 Carrier Prioritization for Type 1 Inter-Carrier Discovery Transmission ITRI discussion
R2-154384 Provision of discovery resource configuration for non-serving carrier Intel Corporation discussion
R2-154546 Resource Configuration for Inter-carrier Discovery transmission Huawei, HiSilicon discussion
R2-154547 Remaining issues for sidelink gap Huawei, HiSilicon discussion
R2-154565 Inter-frequency discovery LG Electronics Francediscussion

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late
R2-154569 Details of sidelink gap LG Electronics Francediscussion
late
R2-154573 Measurement and selection of reference cell for discovery LG Electronics Francediscussion
late
R2-154598 Inter-PLMN coordination for discovery transmission Telecom Italia, Ericsson discussion
R2-154679 Possible issue on access restriction of intra-PLMN and coordinated inter-PLMN cells Kyocera discussion
R2-154680 Further details of sidelink gap for direct discovery Kyocera discussion
R2-154698 On gap request report and trigger ZTE discussion
R2-154757 Inter Frequency and Inter PLMN Discovery Qualcomm Incorporated discussion
Withdrawn:
R2-154053 DL measurement and synchronization reference cell CATT discussion

7.5.4 Group priorities for ProSe communication

Mapping between the logical channel priority and LCG and stage 3 details of BSR reporting

Solutions to address prioritization in case of autonomous resource selection (e.g. solutions other than static one-to-one association between priorities and resource pools).

Need/requirement for pre-emption.

Are multiple transmissions to different destination IDs allowed within one SA period?

R2-154050 Mapping between PPP and LCG ID CATT discussion
R2-154051 Priorization for mode 2 resource allocation CATT discussion
R2-154052 Construction of the Sidelink BSR MAC CE CATT discussion
R2-154062 Priority Handling for D2D Communication Samsung Electronics Co., Ltd discussion
R2-154154 Management of Sidelink logical channel groups Ericsson discussion
R2-154159 Providing ProSe priority Ericsson discussion
R2-154241 Impacts of MCPTT Floor Control and pre-emption on AS PANASONIC R&D Center Germany discussion
R2-154244 Buffer status reporting/priority handling for ProSe communication PANASONIC R&D Center Germany discussion
R2-154246 Resource pool selection for the autonomous resource allocation mode PANASONIC R&D Center Germany discussion
R2-154247 Provisioning ProSe Priority-Per Packet information to UE-to-network Relay UE PANASONIC R&D Center Germany discussion
R2-154270 Discussion on Issues of Priority Handling for ProSe Communication Shenzhen Coolpad Technologies discussion
R2-154300 Realizing off-network MCPTT priority and associated pre-emption on PC5 U.S. Department of Commerce discussion
R2-154317 Providing PPP information to Relay UE LG Electronics Inc. discussion
R2-154321 Construction of SL BSR with ProSe Priority LG Electronics Inc. discussion
R2-154323 Considerations on SL BSR for relay UE Innovative Technology Lab Co. discussion
R2-154325 PPP and LCG mapping LG Electronics Inc. discussion
R2-154385 Priority handling aspects for ProSe communication Intel Corporation discussion
R2-154544 Priority handling for UE-to-Network relay Huawei, HiSilicon discussion
R2-154548 Priority handling based on ProSe Per Packet Priority Huawei, HiSilicon discussion
R2-154575 Prioritization of PC5-S LG Electronics Francediscussion
late
R2-154580 Support of pre-emption LG Electronics Francediscussion
late
R2-154723 Considerations on ProSe Per Packet Priority ETRI discussion
R2-154775 Priority handling for D2D Communication Mode 2 INTERDIGITAL COMMUNICATIONS other
R2-154799 Priority handling for Sidelink Direct Communication Qualcomm Incorporated, ZTE, Samsung discussion
R2-154816 Mapping between logical channel priority and LCG and SL BSR reporting Nokia Networks discussion
R2-154836 Remaining issues on mapping from per packet priority to resource pools SHARP discussion

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7.5.5 Other

MCPTT related, etc

R2-154737 Capturing RAN2 agreements on eSL (REL-13) in 36.331 Samsung Telecommunications other

7.6 WI: LTE-WLAN Radio Level Integration

(LTE_WLAN_radio-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-151022)

Time budget: 1,5 TU

7.6.1 Organizational

Incoming LSs

R2-154017 reply LS to R2-152915 on authentication and encryption between UE and WLAN for aggregation (S3-152085; contact: Huawei) SA3 LS in
to: RAN2 Rel-13 LTE_WLAN_radio-Core
- Nokia ask if they are doing the work for R13. Intel understand yes but not 100% sure.
- Broadcom clarify that currently there is no solution defined.
- Ericsson understand from SA3 colleague that authentication is not a good word. In their understanding the LS does not say that there must be AAA based security.
- Huawei understand that some companies have proposals to use enhance AAA. We could reply that we don't want any CN impact.
- Vodafone: Motivation was to trigger work in SA3 to allow not to use WLAN security. Can reply to clarify and ask for an R13 solution. Intel agree with Huawei and Vodafone.
- MediaTek don't agree we need to send another LS. NEC agree. SA3 is working on it. BlackBerry also agree. CATT agree.

=> Noted

R2-154023 LS on proposed requirements for carrier Wi-Fi networks (Wifi_Alliance_LS_150818; contact: Wifi Alliance staff) Wifi Alliance Operator Marketing Task GroupLS in
- Huawei ask what is the status of their work. Understand that they are still discussing. Broadcom clarify it is a study item on going.
- Broadcom explain that this states that we already have ability for fast inter AP mobility and inter AP load balancing. Nokia think we are already taking this into account with the mobility set where WLAN mobility is not affected.
- China Telecom understand this work is considering difference cases.

=> Noted

Running CRs

The technically endorsed running 36.300 CR after RAN2-91 is available in R2-153972 (Note: At this stage the CR just captures the agreements made so far. The actual stage-2 text and placement in the specification will be discussed further).

- CB: Outcome of offline session Wednesday lunch time to progress stage 2 signalling flows and capturing other agreements from the meeting.

R2-154988 Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement Intel Corporation draftCR 36.300 12.7.0 B revision of endorsed running CR in R2-153972 Rel-13 LTE_WLAN_radio-Core
- Includes signalling flow updates from offline drafting session but not yet other agreements from this meeting.
- CATT asks is steps 3 and 4 are needed for WT modification. Suggest separate flows for WT and eNB initiated modification. MediaTek think RAN3 are working on this aspect. Intel think the 2 procedures are agreed in RAN3. Nokia agrees it is best to separate the procedures into different figures.

=> Separate the WT and eNB initiated WT release and modification flows.

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✉ **=> Email discussion on 36.300 CR on LWA. CR to add all agreements from this meeting. Intended outcome is an endorsed CR (R2-154997). Intel. 1 week deadline.**

Other

7.6.2 LTE+WLAN Aggregation

7.6.2.1 Control Plane Architecture and Functionality

Including output of [91#26][LTE/WiFi] Radio Link Monitoring for WLAN aggregation (Huawei)

Radio link monitoring/WLAN status

R2-154868 Summary of email discussion: [91#26][LTE/WiFi] Radio Link Monitoring for WLAN aggregation Huawei discussion
late
=> Noted

Agreements:
1: When a UE configured with at least one LWA bearer becomes unable to establish or continue LWA operation within the WLAN mobility set, the UE sends a report to indicate "WLAN connection failure" the eNB.
1a: As a consequence of 1 a UE tries to move to another WLAN in the mobility set before it reports WLAN connection failure.
2: The report indicates (at least) a cause value (values to be defined, e.g: "UE problem" or a "WLAN problem".)
FFS when the report is triggered (may depend of the specific cause values)
4: Upon WLAN connection failure, the UE RRC connection re-establishment is not triggered, data reception on WLAN is suspended, no impact to LTE part of the bearer
5: The exact criteria to determine "WLAN connection failure" towards a WLAN are not specified.
FFS whether the mechanism above applies to LWI.

✉ **=> Email discussion on LWI. Topics to be addressed are: a/ whether RLM mechanism is applicable for LWI, b/ steering command, c/idle mode behaviour. Intended outcome is email report to next meeting. Draft CR may also be prepared if there are agreements. Huawei**

R2-154255 WLAN status indication for LWA/LWI Nokia Networks discussion
=> Noted

Agreements
1: Define a single new RRC UL message to convey all the required UE indications (currently only "WLAN connection failure" purpose is agreed)
FFS Whether UE connecting to a WLAN mobility set triggers the indication.

R2-154037 Discussion on WLAN Connection Failure Detection in LWA CATT discussion
R2-154066 Considerations on User Preferences CATT discussion
revised to R2-154880
R2-154880 Considerations on User Preferences CATT discussion
revision of R2-154066
R2-154088 (Temporary) loss of WLAN coverage in LWA Samsung R&D Institute UK discussion
R2-154090 Handling of WLAN UE Capability & User Preferences Samsung R&D Institute UK discussion
R2-154469 Restriction of LWA depending on WLAN status LG Electronics Inc. discussion
R2-154633 Connection failure report Ericsson discussion
Above 7 Tdocs not treated

Stage 2 signalling flows

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R2-154251 Stage-2 signalling flows for LWA Nokia Networks discussion
[Moved from 7.6.1 to 7.6.2.1]

R2-154761 Signalling flows for LTE-WLAN aggregation over Xw and RRC Ericsson discussion
R2-154762 TP for signalling flows for LTE-WLAN aggregation over Xw and RRC Ericsson discussion
R2-154666 Control signalling flows for LWA Intel Corporation discussion
R2-154068 Discussion on mobility procedures of LWA CATT discussion
R2-154089 LTE handover during LTE-WLAN aggregation Samsung R&D Institute UK discussion
R2-154654 Control plane aspects for LWANEC discussion
R2-154065 Discussion on C-plane for LWA CATT discussion
R2-154396 Further Discussion on LWA Procedure ITRI discussion
R2-154708 Further discussion on WT addition procedure MediaTek Inc. discussion
Above 10 Tdocs not treated

UE capabilties

R2-154253 WLAN Capability knowledge at eNB Nokia Networks discussion
R2-154256 UE capabilities for LWA Nokia Networks discussion
R2-154369 UE radio access capability for WLAN HTC Corporation discussion
R2-154632 UE capabilities for LTE-WLAN interworking and aggregation Ericsson discussion
Above 4 Tdocs not treated

Security

R2-154764 Security for WLAN aggregation Ericsson discussion
R2-154252 Security and authentication in LWA Nokia Networks discussion
[Moved from 7.6.1 to 7.6.2.1]

Above 2 Tdocs not treated

WLAN mobility set

R2-154276 WLAN Mobility with WLAN Group MediaTek Inc. discussion
R2-154763 Mobility procedures for LTE-WLAN aggregation Ericsson discussion
R2-154067 Discussion on configuration of WLAN mobility set CATT discussion
R2-154860 WLAN mobility set handling Huawei, HiSilicon discussion
Above 4 Tdocs not treated

Stage 2, other

R2-154086 WLAN Activation/Deact during LTE-WLAN aggregation Samsung R&D Institute UK discussion
R2-154371 QoS handling of offloaded bearer in LWA Samsung R&D Institute UK discussion
R2-154426 Consideration on QoS control in LWA ZTE Corporation discussion
R2-154706 Discovery and selection of a network that provides cellular – WLAN aggregation BROADCOM CORPORATION discussion
R2-154839 Remaining Control Plane Issues for LWA and LWI QUALCOMM CDMA Technologies discussion
Above 5 Tdocs not treated
R2-154841 LWA and LWI Issues for SA groups QUALCOMM CDMA Technologies discussion
=> Noted
- Sony think SA2 have already started to discuss and that they have concluded in R13.
- Intel suggest to attach the latest stage 2.
- MediaTek think that we should just ask about co-existence
- Broadcom think it is not clear what they should do. Qualcomm we expect them to do the work as in R12.
- BlackBerry ask are we endorsing the same 12 framework for interaction with upper layers.
- DCM think that policy and charging are important and it is good to send LS.

=> Draft LS to SA2 in R2-154909

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R2-154909 Draft LS to SA2 on LWA and LWI Issues QUALCOMM CDMA Technologies LS out Rel-13 LTE_WLAN_radio-Core
- Broadcom support the LS and think the coexistence issues should also be addressed for the legacy AP WI.

=> Correct feature name for RAN rules.
=> Clarify that it address the upper layer interaction between the features.
=> To be revised in R2-154914

R2-154914 Draft LS to SA2 on LWA and LWI Issues QUALCOMM CDMA Technologies LS out Rel-13 LTE_WLAN_radio-Core
=> " lower priority for Release-13" is changed to "not essential for work item completion"
=> Running CR will be attached when endorsed by email
=> Approved in R2-154935

Stage 3

R2-154730 Capturing RAN2 agreements on eWLAN (REL-13) in 36.331 Samsung Telecommunications other

R2-154254 RRC for LWA Nokia Networks discussion

Above 2 Tdocs not treated

Withdrawn:

R2-154375 Remaining issues about LTE WLAN Aggregation Spreadtrum Communications discussion

7.6.2.2 User Plane Architecture and Functionality

PDCP PDU identification in WLAN

R2-154393 LWA PDCP transfer on WLAN Intel Corporation, China Telecom, MediaTek Inc., Nokia Networks, Ericsson, Huawei, HiSilicon, Qualcomm Incorporated discussion
=> Noted

R2-154035 Discussion and Comparison of LWA UP Architecture Options CATT, Fujitsu, ZTE, CATR discussion
revised to R2-154957

R2-154957 Discussion and Comparison of LWA UP Architecture Options CATT, Fujitsu, ZTE, CATR, OPPO discussion
revision of R2-154035
=> Noted

R2-154752 PDCP packet identifiers for WLAN in LWA Cisco Systems discussion
=> Noted

Discussion of 3 proposals above:
- Broadcom think that if operator doesn't want mobility then a L2 solution is ok. If operators want a wider deployment with mobility then an IP based solution is preferred. L2 also requires updated WLAN APs. Qualcomm think this is a different subject which is addressed by the new WI. Broadcom clarify they are not referring to legacy networks but to large deployments.
- Vodafone think that L2 ethernet type might be ok on approx half APs in their network. Mac address may work on most. Hence, if we go for L2 then both should be allowed.
- Intel thinks there is a new WI for legacy APs. Ethertype is supposed to be transparent to WiFi. Some implementation may not do this but the feature should not be designed do this.
- China Telecom think ethertype has least impact, and think that many AP handle this ok.
- CATT we do not need any update to AP and AC. This is not covered in the new WID and should be covered in this WI.
- Vodafone are not concerned with upgrades if needed but there are some that are not upgradeable. Hence the reason for both L2 options. For UE the 2 approaches should be similar.
- BlackBerry would like to implement a single solution and can accept any.
- MediaTek think all can work but prefer ethertype.
- Cisco think the L3 mobility issue is a deployment choice. There may be many deployments that don't use L3. If we were to go for ethertype then other option (MAC address) may not be needed. One is better than both.

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- Intel think that putting PDCP on top of IP will require going to IETF. CATT think it can be avoided with the source IP address. Intel think differentiating the content on address (MAC or IP) will still require something in the ethernet or IP protocol type. MediaTeK agree with Intel.
- CATT is against a L2 solution. It can't cover all deployment scenarios. And interaction with IEEE may not be that simple. Huawei think we can focus on the main deployment scenrios
- Cisco think there is L2 connectivity between WT and UE.
- Fujitsu support L3 solution. Specifying both could be ok as different operators have different deployments. Intel think we already have agreed 2 solution. Lets agree on one for this issue. IEEE registration is ok.
- NEC support ethertype and one solution. Nokia agree.
- ZTE support both L2 and L3 solutions.
- Vodafone would like one L2 solution, but not clear that one L2 solution will work on all APs.
- DT would prefer one L2 solution. Other WI can deal with other deployments.
- Ruckus: The registration process in IEEE is very easy although there is a fee.

=> Agree to an L2 solution.

- CATT and Broadcom have remaining concerns on the agreement.
- CATT are not convinced by the technical benefits of L2 solutions.

=> Discuss offline on which L2 solutions (ethertype or MAC address or both) to selection (Qualcomm, Ozcan)

=> Offline session Wednesday lunch time to progress stage 2 signalling flows. Outcome will be a merged proposal for the stage 2. (Intel, Sasha)

R2-154985 Way forwards on L2 solutions for PDCP packet identifiers for WLAN and in LWA Qualcomm Systems discussion

=> Noted

Agreements:

1. A new Ethertype will be introduced to identify the PDCP PDUs transmitted over WLAN for LWA
   a. The rapporteur will communicate this decision to 3GPP to initiate the application with IEEE Registrations Authority for the new Ethertype
2. Introduction of source MAC address as a second solution is FFS and can further be discussed at the next RAN2 meeting.

R2-154034 Discussions on IP based Solutions for LWA UP CATT discussion
R2-154335 How to deliver LTE PDU over WLAN for LTE-WLAN aggregation SAMSUNG Electronics Co., Ltd. discussion
R2-154306 Architecture and protocol details for LWA FUJITSU LIMITED discussion
R2-154768 Draft LS on EtherType allocation for PDCP packets Ericsson LS out
Above 4 Tdocs not treated

Flow control

R2-154838 UE based flow control for LTE-WLAN aggregationMediaTek Inc., China Telecom discussion
R2-154765 Flow control in LTE-WLAN Aggregation Ericsson discussion
R2-154069 Flow Control for LWA CATT discussion
R2-154258 Flow control for LWANokia Networks discussion
R2-154394 UE status reporting for LWA Intel Corporation, China Telecom discussion
R2-154656 Flow control for LWANEC discussion
R2-154661 On flow control feedback for LTE WLAN radio interworking/aggregation TCL Communication Ltd. discussion
R2-154767 Draft LS on PDCP feedback and flow control in LTE-WLAN aggregation Ericsson LS out
Above 8 Tdocs not treated

Other

R2-154036 Discussion on WLAN QoS Provision in LWA CATT discussion
R2-154257 Remaining QoS and security details for adaptation layer in LTE-WLAN aggregation Nokia Networks discussion

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R2-154143 WiFi-link data retransmission consideration for LWA China Mobile Com. Corporation discussion
R2-154392 Remaining user plane aspects of LWA Intel Corporation discussion
R2-154709 WLAN User Plane Architecture Solution for LWA BROADCOM CORPORATION discussion
R2-154766 User plane aspects of LTE-WLAN aggregation Ericsson discussion
R2-154861 PDCP reordering for LTE-WLAN aggregation Huawei, HiSilicon discussion
Above 7 Tdocs not treated

Withdrawn:
R2-154705 UE based flow control for LTE-WLAN aggregation MediaTek Inc., China Telecom discussion

7.6.3 Interworking Enhancements

Steering command

- Comeback to discuss possible email discussion on interworking enhancements steering command, including brief presentation of contributions if time allows.

✉ **Email discussion: Association confirmation message from UE to eNB - whether it is supported and how it is defined. Intended outcome: Email report to next meeting. (CATT)**

✉ **Email discussion: UE feedback - whether it is supported and how it is defined. Intended outcome: Email report to next meeting. (Intel)**

✉ **Email discussion: UE capabilities. Intended outcome: Email report to next meeting. (Qualcomm)**

R2-154859 Traffic steering method for interworking enhancement Huawei, HiSilicon, Qualcomm, Intel, BlackBerry, Interdigital discussion
R2-154634 Further discussion on WLAN interworking for Rel-13 Ericsson discussion
R2-154635 Threshold based WLAN interworking Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_WLAN_radio-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154070 Procedures of LTE-WLAN Interworking Enhancements CATT discussion
R2-154397 Discussion on traffic steering command of LTE-WLAN Interworking ITRI discussion
R2-154399 Consideration for RAN Controlled WLAN Interworking ITRI discussion
Above 6 Tdocs not treated

Idle mode

R2-154334 Co-existence with Rel-12 and Rel-13 LTE-WLAN interworking SAMSUNG Electronics Co., Ltd. discussion
R2-154561 IDLE mode functionality for LTE/WLAN integration Nokia Networks other
R2-154694 RAN assistance parameters for IDLE UE in Interworking Enhancement Kyocera discussion
Above 3 Tdocs not treated

Stage 2, other

R2-154087 Inactivity reporting in enhanced LTE-WLAN interworking Samsung R&D Institute UK discussion
R2-154429 Usecases for LTE-WLAN Interworking Enhancement ZTE Corporation discussion
R2-154470 Blind WLAN interworking command LG Electronics Inc. discussion
R2-154636 Parameter handling for WLAN interworking Ericsson discussion
R2-154637 Parameter handling for WLAN interworking Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_WLAN_radio-Core
wrong spec ver number used in CR cover; it should be 12.7.0

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R2-154638 Parameter handling for WLAN interworking Ericsson draftCR 36.304 12.6.0 B Rel-13 LTE_WLAN_radio-Core
wrong spec ver number used in CR cover; it should be 12.6.0
R2-154702 UE offload confirmation for RAN Controlled WLAN Interworking Kyocera discussion
R2-154832 On the relationship between Release-13 and Release-12 LTE-WLAN InterworkingMediaTek Inc. discussion
Above 8 Tdocs not treated

Withdrawn:
R2-154707 On the relationship between Release-13 and Release-12 LTE-WLAN InterworkingMediaTek Inc. discussion

7.6.4 RRM Measurements

RRM measurement framework both, for LTE+WLAN Aggregation and Interworking

Including output of [91#27][LTE/WiFi] RRM Measurement Framework (Intel)

R2-154395 Report on RAN2 email discussion: [91#27][LTE/WiFi] RRM Measurement Framework for WLAN Intel Corporation report
revised to R2-154987
R2-154987 Report on RAN2 email discussion: [91#27][LTE/WiFi] RRM Measurement Framework for WLAN Intel Corporation report
revision of R2-154395; revised to R2-154989
R2-154989 Report on RAN2 email discussion: [91#27][LTE/WiFi] RRM Measurement Framework for WLAN Intel Corporation
=> Noted

Agreements
1 "A WLAN becomes better than threshold". (motivation for the event was aggregation activation)

2 UE cannot detect a WLAN in the mobility set better than threshold and a WLAN outside the mobility set becomes better than threshold (motivation for the event was Inter-mobility set mobility)

3 UE cannot detect a WLAN in the mobility set better than threshold (motivation for the event was deactivation)

4 Details of events will be specified in stage 3.

5 RAN2 will not define separate events for LWA and LWI (up to eNB how events are used)

6 eNB configures maximum number of WLAN identifiers outside the mobility set to report.
6a FFS UE reports the serving AP

9: BSSID, HESSID, SSID, WLAN frequency/channel and band can be used in measurement object configuration.
FFS whether a 'measurement set' is introduced

10: to use Beacon RSSI to trigger WLAN measurement reporting. FFS whether other metrics should be possible to trigger events.

11: to report Beacon RSSI, channel utilization, station count, admission capacity , backhaul rate and WLAN identifier. eNB can configure which are reported.

12: to define time to trigger for WLAN measurements (similar to LTE)

14: to define hysteresis for WLAN measurements.

R2-154912 LS to RAN4 on Agreements for WLAN measurement reporting, Ericsson
=> To be revised to be a copy of the agreement box. With some explanation.

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=> Revision in R2-154913
R2-154913 LS to RAN4 on Agreements for WLAN measurement reporting, Ericsson
✓ => Approved in R2-154928

R2-154071 RRM Measurements for LWA and LWI CATT discussion
R2-154275 RRM Measurement for LWA and NCIWK MediaTek Inc. discussion
R2-154333 UE requirements for LTE-WLAN interworking/ aggregation SAMSUNG Electronics Co., Ltd. discussion
R2-154400 Limited reporting of WLAN measurement results ITRI discussion
R2-154471 WLAN measurement framework LG Electronics Inc. discussion
R2-154629 WLAN measurement reporting Ericsson discussion
R2-154630 Layer-3 filtering for WLAN measurements Ericsson discussion
R2-154631 Introducing WLAN measurements Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_WLAN_radio-Core
wrong spec ver number used in CR cover; it should be 12.7.0
Above 8 Tdocs not treated

7.7 WI: Multicarrier Load Distribution in LTE

(LTE_MC_load-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-151206)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session (see Annex I)

Incoming LSs

R2-154022 Reply LS to R2-151785 on a new measurement quantity for Multicarrier Load Distribution (R4-155130; contact: China Mobile) RAN4 LS in to: RAN2 Rel-13 LTE_MC_load-Core

Including output of [91#28][LTE/Load Balancing] Redistribution Schemes (ZTE)

R2-154440 Summary of email discussion 91#28 ZTE Corporation report summary of email discussion [91#28]
late

R2-154109 Stage-3 work on RS-SINR measurements NTT DOCOMO, INC. discussion
R2-154110 Intdroduction of RS-SINR measurements NTT DOCOMO, INC. draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154128 36304_CRxxxx_(Rel-13)_R2-15xxxx Randomized thrshold offset China Telecom, ZTE Corporation draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
wrong spec number used in CR cover; it should be 12.6.0
R2-154129 36331_CRxxxx_(Rel-13)_R2-15xxxx Randomized thrshold offset China Telecom, ZTE Corporation draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154140 Discussion on introducing RS-SINR measurement China Mobile Com. Corporation discussion
R2-154434 Measurement rules supporting Cell Specific Priority LG Electronics Francediscussion
R2-154436 CR to 36304 Measurement rules supporting CSP LG Electronics FrancedraftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
wrong spec number used in CR cover; it should be 12.6.0
R2-154437 RS-SINR measurement condition triggered by RSRQ measurement for load balancing and a TP LG Electronics Francediscussion
R2-154584 Redistributing a fraction of idle mode UEs among carriers Sony discussion
R2-154590 Introduction of idle mode redistribution among carriers Sony draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154621 Distributing UEs to multiple carries Huawei, HiSilicon draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core

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R2-154622 Distributing UEs to multiple carries Huawei, HiSilicon draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
revised to R2-154882
R2-154882 Distributing UEs to multiple carries Huawei, HiSilicon draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
revision of R2-154622
R2-154623 Distributing UEs to multiple carries Huawei, HiSilicon discussion
R2-154628 Cell-specific prioritization for load balancing Ericsson discussion
R2-154647 Cell-specific prioritization for idle mode load balancing Ericsson draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
R2-154648 Cell-specific prioritization for idle mode load balancing (Alt 1) Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
R2-154649 Cell-specific prioritization for idle mode load balancing (Alt 2) Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
R2-154687 The impact of RS-SINR on RAN2 specification Nokia Networks discussion
R2-154690 Possible compromise solution for re-distribution of a fraction of users Kyocera discussion
R2-154691 Paging based “One-shot” redistribution mechanism Nokia Networks discussion
R2-154692 Paging-triggered cell specific prioritization Kyocera discussion
R2-154703 Extension of Frequency Priorities Nokia Networks draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
R2-154704 Extension of Frequency Priorities Nokia Networks draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
R2-154729 A harmonised CRS solution for Idle mode load distribution Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Samsung, LG Electronics, Intel Corporation discussion
late
R2-154776 Signalling support for SINR measurements Ericsson discussion
R2-154783 UE redistribution for load balancing MediaTek Inc. discussion
R2-154857 Unified Redistribution Proposal QUALCOMM CDMA Technologies discussion
Withdrawn:
R2-154586 Introduction of idle mode redistribution among carriers Sony CR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core

7.8 WI: Dual Connectivity Enhancements

(LTE_dualC_enh-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-150490)

Time budget: 0.25 TU in main room (+1 TU in stage-3 UP session)

Incoming LSs

R2-154009 LS on UE based timing offset reporting for DC enhancement (R4-154844; contact: NTT DOCOMO) RAN4 LS in to: RAN2 Rel-13 LTE_dualC_enh-Core
- DCM explain that RAN4 can continue to discuss the resolution of the delta Z values

=> Noted

- CB: New draft outgoing LS

R2-154906 Draft LS on UE based timing offset reporting for DC enhancement Response (to: RAN1, RAN4; cc: -; contact: NTT DOCOMO) NTT DOCOMO LS out reply LS to R2-154009 = R4-154844 Rel-13 LTE_dualC_enh-Core
- Ericsson suggest to add sentence clarifying that RAN2 did not find a need but if RAN4 have one it can be considered. ZTE support Ericsson. DCM and Huawei do not see need for this.
- ZTE think that in this case there is no need to report the subframe boundary.

=> Add a sentence to say "RAN2 did not find a need to report neighbour cell offset measurements"
=> Revised LS is approved in R2-154911.

R2-154030 LS on RAN3 agreement on DC enhancement for LTE, RAN3
- Samsung think we currently have some description that says these procedures are not used. But procedures should support them. ZTE also checked the procedures and did not find any issues. DCM ask if stage 2 is correct. Samsung understand RAN3 will make some updates to stage 2. Samsung will prepare updates to RRC.

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=> Noted

✉ **Email discussion on running CR to 36.331 on DC-enh. Outcome CR submitted to the next meeting. DCM (Toru).**

7.8.1 CP

Including output of [91#30][LTE/DCe] SFN/subframe offset reporting (NTT DOCOMO)

SFN/subframe offset reporting

R2-154398 Email discussion report on [91#30][LTE/DCe] SFN/subframe offset reporting NTT DOCOMO INC.(rapporteur) report Related to email discussion [91#30]

P1
- Qualcomm explain that reporting can't be used to determine sync/async, this must be based on network configuration. ALU agree.
- DCM think the WI includes the case that reporting can be used to determine sync/async.
- H/w think the reporting can be used for coordination of gaps, etc. Agree with Qualcomm regarding sync/async.
- Samsung can consider the case where reporting is to determine sync/async if there is no added complexity.
- ZTE support DCM view.
- Nokia think it doesn't matter how the eNB implementation uses it. Huawei think it may have impact on e.g. the need for periodical reporting, and accuracy of the report. Qualcomm have concern about 1a as it is complex and don't see the need. P1a is more complex if it is a high resolution measurement. MediaTek agree with Qualcomm.
- Nokia think the consequence of having the measurement in advance is that there will be a reconfiguration after DC is configured.
- Nokia would be ok to limit to just PSCell for sake of progress. DCM can also agree to this for progress. NEC agree with Nokia and DCM. Samsung agree with DCM.
- Intel think PSCell is enough.
- Ericsson would like to know whether to consider sync/async and for this the report is needed before configuration. Panasonic think the timing can be got from other UEs.

P2
- DCM think that we need to understand whether we will support 1a what the measurement frame work will look like. Huawei agree that use case is important

P4
- ALU ask is SCG-ConfigInfo is appropriate for something that is system specific rather than UE specific. ZTE think the benefit is that it avoids RAN3 impact. DCM agree with ZTE. ALU think would shouldn't a decision for RAN2. CATT also prefer to use SCG-ConfigInfo.

Agreements
1: eNB can configure SFN/subframe offset reporting for PSCell when DC is configured. FFS on other cells.
2: UE only needs to read MIB to measure/report SFN/subframe offset.
3: Consider RAN4's agreements on SFN offset report contents as a baseline for the report contents.
4: If reporting is agreed for more than PSCell, the UE does not report detected cells.
5: MeNB forwards the SFN/subframe offset from MeNB to SeNB using SCG-ConfigInfo.
6: Define the capability for SFN/subframe offset reporting.
7: One shot reporting (i.e. eNB configures measurement and UE sends single report, not periodical)

=> Can continue to discuss whether to extend reporting to cells beyond the PSCell (proposal 1a and 1b from the contribution)
- DCM give update of offline. Many companies think the use case is DRX and measurement gap alignment. Hence it is only needed for the PSCell. LS available in R2-154906.
- ZTE explain they tried to clarify the motivation. Huawei think that whether a network is sync or async then this is known by OAM. If it is async then OAM can not know. ZTE think

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OAM ca be from a different vendor and hence the sync property can not be known. Nokia think we have specified features that rely on this knowledge in the network. Qualcomm agree with Nokia. An async might be synchronised according to UE reporting but there is no mechanism to detect a change. Ericsson think we did not find a need but RAN4 might anyway find it feasible.

=> Measurement is limited to the PSCell

R2-154646 Discussion on SFN and subframe timing difference for DC enhancements Ericsson discussion

R2-154819 SFN/Subframe time difference measurement and reporting Qualcomm Incorporated discussion

R2-154599 Follow-up discussion on SFNsf reporting NTT DOCOMO INC. discussion

R2-154115 Considerations on SFN/subframe offset reporting CATT discussion

R2-154166 Discussion on the UL SFN or subframe offset ZTE Corporation discussion

R2-154167 Signaling improvements on SFN or subframe offsets ZTE Corporation discussion

R2-154464 SFN/subframe offset reporting NEC Corporation discussion

R2-154715 Discussion on SFN offset signalling Alcatel-Lucent Telecom Ltd discussion

Above 8 Tdocs not treated

Stage 3

R2-154165 Introduction of Dual Connectivity enhancements in Rel-13 (Alt.1) NTT DOCOMO, INC. draftCR 36.331 12.7.0 B Rel-13 LTE_dualC_enh-Core

wrong spec ver number used in CR cover; it should be 12.7.0

R2-154711 Intdroduction of Dual Connectivity enhancements in Rel-13 (Alt.2) NTT DOCOMO, INC. draftCR 36.331 12.7.0 B Rel-13 LTE_dualC_enh-Core

wrong spec ver number used in CR cover; it should be 12.7.0

R2-154116 Considerations on SFN/subframe offset reporting for 331 CATT draftCR 36.331 12.6.0 Rel-13 LTE_dualC_enh-Core

Tdoc ino and CR contents are not matched

R2-154274 CG Indication of Uplink Split Threshold MediaTek Inc. discussion

R2-154349 Value range for threshold Samsung Electronics Co., Ltd, CATT, Ericsson, LG Electronics, Mediatek, Nokia Networks, Panasonic, ZTE draftCR 36.331 12.7.0 B Rel-13 LTE_dualC_enh-Core

wrong spec ver number used in CR cover; it should be 12.7.0

Above 5 Tdocs not treated

7.8.2 UP

R2-154409 Introduction of UL split bearer in PDCP LG Electronics Inc., Nokia Networks, Ericsson, MediaTek Inc., Panasonic, ZTE, CATT, Samsung, NTT DOCOMO draftCR 36.323 12.4.0 B Rel-13 LTE_dualC_enh-Core

=> CR can be used as baseline for adding any agreements from this meeting.

=> Endorsed as a running CR

R2-154268 Remaining issue for PDCP data transmission Huawei, HiSilicon discussion

- Ericsson think we don't need to specify this but can leave to UE implementation. Samsung agree with Ericsson. NSN agree. Kyocera agree.
- LG think the current CR captures that PDCP data transmission is upon request from lower layers and this covers all issues. Qualcomm agrees this is already captured and this is enough.
- Huawei think it is not clear to which RLC entity the PDCP data will be submitted. LG think this is covered - it depends whether MCG or SCG MAC requests data transmission to the PDCP.
- DCM think this is not essential for he WI.

=> Noted

R2-154111 Threshold Value Range Nokia Networks, Ericsson, LG Electronics, Mediatek, Panasonic, Samsung, ZTE discussion

P1

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- DCM think typical IP packet size if 1500 bytes. Is there any need to have values less than 1500 other than zero. Samsung think that for uplink the typical size may be less than 1500. It is safer to have this value range. Huawei agree with DOCOMO.
- Nokia think that we can't assume that physical layer will provide 1500 bytes immediately
- Intel think uplink will have smaller packets and support the proposal.

=> Noted

Agreements:
1: the minimum value of ul-DataSplitThreshold is zero and the first step after is 100 bytes.
2: the maximum of ul-DataSplitThreshold is 819,200 bytes.
3: an exponential distribution over 15 values is used.
Using the same formulas as originally used for the BSR [R2-083101], we obtain the following range:
- 0, 100, 200, 400, 800, 1600, 3200, 6400, 12800, 25600, 51200, 102400, 204800, 409600, 819200.

R2-154645 Further details for PDCP data transfer procedure for uplink bearer split Ericsson discussion
=> Not treated. Covered by draft CR in R2-154409

R2-154184 Split Bearer Reconfiguration Nokia Networks discussion
- Huawei think this is not necessary. Generally we don't need to maintain QoS during short time duration. Nokia think this assumes the bearer is continually served but in this case the tokens will accumulate while the bearer is reconfigured.
- ALU ask about the RLC Acks for the DL. If we reconfigure the PBR at the same time as the bearer there will be a problem.
- LG asks about MCG to split configuration - is the PBR of the SCG deducted from the MCG value. Think this makes the UE complex and the eNB can reconfigure the PBR values. Panasonic agree that PBR can be reconfigured. Nokia agree the PBR can be reconfigure but for the tokens there is nothing specified.

=> Noted

R2-154364 PDCP Retransmissions Nokia Networks discussion
- Huawei think PDCP will not deliver too many PDUs to lower layers and if packets are stuck then RLF will be triggered. So this is not necessary.
- Nokia clarify that the timer for the retransmission would be much shorter than the discard timer.
- Ericsson ask where the packet was lost. Nokia explain it is just to speed up recovery but RLC would eventually have recovered the packet.
- Samsung think that the bearer could be reconfigured to MCG bearer.

=> Noted

R2-154401 Issues of Uplink Split Bearer Configuration ITRI discussion
Not treated

R2-154117 Scheduling coordination between MeNB and SeNB CATT discussion
- Nokia think we have discussed these aspects and already ruled out this kind of coordination. LG think we did not rule anything out. Ericsson think it is not needed as the threshold is enough. Huawei think when we agreed the double BSR reporting we discussed this issue and ruled it out. ZTE think we can address this by setting a higher values for the threshold.
- Samsung has some sympathy for the proposal. It is simple addition to the signalling and some network vendors see some use. LG agree it is not big impact and can be useful.
- Kyocera think nothing was ruled out and it is natural to consider this kind of coordination.

=> Noted

R2-154134 Discussion on the DL PDCP discard issue ZTE Corporation discussion
- Ericsson assume that the eNB can set the SN late and hence there will not be any gaps.
- Qualcomm think it is not needed.
- ZTE clarify that this is to address lost packets over X2. Huawei think this is a very rare case and also limits network implementation flexibility.

=> Noted

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R2-154138 Discussion on the DL PDCP discard issue ZTE Corporation draftCR 36.323 12.4.0 B related to R2-154134 Rel-13 LTE_dualC_enh-Core
wrong spec ver unmber used in CR cover
=> Not agreed

Withdrawn:
R2-154315 Introduction of UL split bearer in PDCP LG Electronics Inc., Nokia Networks, Ericsson, MediaTek Inc., Panasonic, ZTE, CATT, Samsung, NTT DOCOMO CR 36.323 12.4.0 B Rel-13 LTE_dualC_enh-Core

7.9 WI: RAN enhancements for extended DRX in LTE

(LTE_extDRX-Core; leading WG: RAN2; started: Mar. 15; target: Dec. 15; WID: RP-150493)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session (see Annex H)

7.9.1 eDRX for idle mode

Including output of email discussion [91#32][LTE/eDRX] eDRX and H-SFN range (Intel)

Value range or eDRX in idle mode and H-SFN range

System information change impacts

Other idle mode impacts

R2-154294 Email discussion report on [91#32][LTE/eDRX] eDRX and H-SFN range Intel Corporation report
late

R2-154171 Need of shorter wake up duration from eDRX SoftBank Corp. discussion
R2-154173 UE request on idle mode eDRX cycle value SoftBank Corp. discussion
R2-154279 Considerations for loose paging occasion synchronism between eNBs Sierra Wireless, S.A. discussion
R2-154295 Open aspects on extending DRX cycle for idle mode Intel Corporation discussion
R2-154310 Remaining issues on the I-eDRX FUJITSU LIMITED discussion
R2-154313 Considerations for paging occasion change indication in idle mode eDRX Sierra Wireless, S.A. discussion
R2-154357 Extending DRX Cycle in Idle Mode Huawei, HiSilicon discussion
R2-154421 Remaining Issues for Idle Mode DRX Extension in LTE MediaTek Inc. discussion
R2-154427 Paging occasion calculation for eDRX operation in idle mode Nokia Networks discussion
R2-154435 Signalling for Rel-13 eDRX support Samsung Telecommunications discussion
R2-154442 On the ETWS/CMAS support in Rel-13 eDRX Samsung Telecommunications discussion
R2-154467 Impacts on system change acquisition for eDRX and transmission of H-SFN. LG Electronics Inc. discussion
R2-154562 SI update for eDRX Nokia Networks discussion
R2-154652 Handling of the System Information Update for I-eDRX UEs INTERDIGITAL COMMUNICATIONS discussion
R2-154663 Clarification for LC/EC and Non-LC/EC UE supporting eDRX NTT DOCOMO INC. discussion
R2-154681 Idle mode UE behaviour with Extended DRX Kyocera discussion
R2-154754 Paging Transmission Window Ericsson discussion
R2-154817 Impact of PTW on power consumption in I-eDRX Intel Corporation discussion
R2-154846 Hyper-SFN paging procedures for eDRX QUALCOMM CDMA Technologies discussion
R2-154848 Draft Running 36.300 CR to capture agreements on RAN enhancements for extended DRX in LTE QUALCOMM CDMA Technologies draftCR 36.300 13.1.0 B Rel-13 LTE_extDRX-Core
wrong spec ver number used in CR cover; it should be 13.1.0

Withdrawn:

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R2-154450 SI update for eDRX Nokia Networks discussion

7.9.2 eDRX for connected mode

RAN2 issues related to extending DRX up to 10.24s in connected mode.

Note: RAN-68 agreed that extended connected mode DRX cycle beyond 10.24 seconds is no longer pursued in this WI

R2-154078 the network capacity issues with the C-eDRX Beijing Xinwei Telecom Techn. discussion
R2-154358 Extending DRX Cycle in Connected Mode Huawei, HiSilicon discussion
R2-154422 Remaining Issues for Connected Mode DRX Extension in LTE MediaTek Inc. discussion
R2-154438 How to apply the extended DRX in the connected mode Samsung Telecommunications discussion
R2-154439 Connected mode eDRX operation Nokia Networks discussion
R2-154852 Extended DRX in connected mode QUALCOMM CDMA Technologies discussion

7.10 SI: Study on Latency reduction techniques for LTE

(FS_LTE_LATRED; leading WG: RAN2; started: Mar. 15; target: June 16; WID: RP-150465)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session (see Annex H)

TR

TR 36.881 v0.3.0 is agreed in R2-153984 (result of email discussion [91#17])

7.10.1 L2 enhancements to reduce latency

R2-154120 DRX and Short interval SPS CATT discussion
R2-154121 PDCCH missing issue with skipping UL transmission CATT discussion
R2-154122 Analysis on resource efficiency of uplink access solutions CATT, CATR discussion
R2-154142 Potential issues on enhanced SPS mechanism China Mobile Com. Corporation discussion
R2-154191 Contention based uplink transmission Huawei, HiSilicon discussion
R2-154192 Further analysis on uplink transmission skipping Huawei, HiSilicon discussion
R2-154193 Downlink latency reduction for unsynchronized UEs Huawei, HiSilicon discussion
R2-154318 Enhanced Scheduling Request for Latency Reduction LG Electronics Inc. discussion
R2-154322 Long-duration UL grant LG Electronics Inc. discussion
R2-154350 Further discussion on Prescheduling Samsung Electronics Co., Ltd discussion
R2-154351 Skipping uplink transmission on configured uplink grant with no data to transmit Samsung Electronics Co., Ltd pCR 36.321 Rel-13 TEI13, FS_LTE_LATRED
wrong Type used; it should be "draftCR"
R2-154352 Skipping uplink transmission on configured uplink grant with no data to transmit Samsung Electronics Co., Ltd pCR 36.331 Rel-13 TEI13, FS_LTE_LATRED
wrong Type used; it should be "draftCR"
R2-154353 Enhancements on SPS prescheduling Samsung Electronics Co., Ltd discussion
R2-154354 Enhancements on SPS prescheduling Samsung Electronics Co., Ltd pCR Rel-13 FS_LTE_LATRED
R2-154355 Configuring SPS on SCell Samsung Electronics Co., Ltd pCR 36.331 Rel-13 TEI13, FS_LTE_LATRED
wrong Type used; it should be "draftCR"
R2-154386 Further aspects of fast uplink access solutions Intel Corporation discussion
R2-154411 Combined SR with BSR for reducing UP latency III discussion
R2-154491 Potential protocol enhancement for Fast uplink access Nokia Networks discussion
R2-154533 Supporting MU-MIMO in enhanced uplink SPS transmission Lenovo (Beijing) Ltd discussion
R2-154534 The Impact of Latency Reduction on UL SPS ASUSTEK COMPUTER (SHANGHAI) discussion
R2-154554 Further Discussion on SPS with Consideration to Resource Efficiency ETRI discussion
R2-154563 Consideration on Heterogeneous TTIs in a Carrier ETRI discussion
R2-154741 Layer 2 solutions for latency reduction Ericsson discussion

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R2-154742 Skipping padding in SPS and dynamic grants Ericsson discussion

7.10.2 TTI reduction

Including output of email discussion [91#29][LTE/Latency] Evaluation results (Ericsson)

R2-154743 Email discussion report on [91#29][LTE/Latency] Evaluation results Ericsson (Rapporteur) report
late
R2-154744 TR Text Proposal capturing outcome of [91#29][LTE/Latency] Evaluation results Ericsson (Rapporteur) pCR
late

R2-154123 VoLTE Capacity Analysis with TTI shortening CATT discussion
R2-154172 Utilization of short TTI in higher layer ZTE Corporation discussion
R2-154296 Protocol impact of TTI reduction Intel Corporation discussion
R2-154740 Study of shorter TTI for latency reduction Ericsson discussion
R2-154809 TCP Performance with shorter TTI lengths QUALCOMM CDMA Technologies discussion

7.10.3 Handover latency enhancements

Evaluation of the handover delays and investigation of possible enhancements

R2-154168 Analysis on the handover latency ZTE Corporation discussion
R2-154194 Latency reduction during Handover Huawei, HiSilicon discussion
R2-154259 Latency reduction during handover Nokia Networks discussion
R2-154716 Discussion on reduction of handover interruption Alcatel-Lucent Telecom Ltd discussion
R2-154810 Handover Latency Improvements QUALCOMM CDMA Technologies discussion
R2-154813 Analysis on reduction of handover interruption Intel Corporation discussion

7.10.4 Other

No contributions received.

7.11 SI: Feasibility Study on LTE-based V2X Services

(FS_LTE_V2X; leading WG: RAN1; started: June. 15; target: June 16; WID: RP-151109)

Time budget: 0.5 TU

Documents in this agenda item will be handled in the LTE Break Out session (see Annex H)

Incoming LSs

R2-154008 LS on traffic model assumption in LTE-based V2X (R1-155014; contact: LGE) RAN1 LS in to: RAN2 Rel-13 FS_LTE_V2X

R2-154579 Study plan for V2X in RAN2 LG Electronics Inc. Work Plan

R2-154147 Considerations of V2X implications to RAN operation Nokia Networks discussion
R2-154260 Network Architecture and Feasibility Evaluation for Uu-based V2V/V2P CATT discussion
R2-154261 Draft Reply RAN1 LS on traffic model assumption in LTE-based V2X CATT LS out
R2-154262 Analysis on V2V message size CATT, CATR discussion
R2-154263 Discussion on PC5/Uu transport for V2I/N services CATT discussion
R2-154297 Initial considerations on V2V Intel Corporation discussion
revised to R2-154896
R2-154896 Initial considerations on V2V Intel Corporation discussion
revision of R2-154297
R2-154500 RAN2 issues for LTE V2V ETRI other
R2-154567 Latency analaysis of Uu based V2V LG Electronics France discussion
late; revised to R2-154887
R2-154887 Latency analaysis of Uu based V2V LG Electronics France discussion
revision of R2-154567

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R2-154581 Uu V2V scenarios LG Electronics Inc. discussion
R2-154611 General Analysis of Scenarios for V2X Services Huawei, HiSilicon discussion
R2-154612 Potential RAN2 Issues and Enhancements for PC5 transport of V2X services Huawei, HiSilicon discussion
R2-154613 Feasibility study for Uu transport for V2V service Huawei, HiSilicon discussion
R2-154614 Enhancement for Uu transport of V2V Service Huawei, HiSilicon discussion
R2-154667 Layer-2 protocol stack for PC5-based V2X Ericsson discussion
R2-154668 Traffic characteristics of LTE-based V2X Ericsson discussion
R2-154669 Traffic management and resource allocation in V2X Ericsson discussion
R2-154670 V2X scenariosEricsson discussion
R2-154671 DRAFT LS on V2X message characteristics Ericsson LS out
LS answer to LSin R2-154008
R2-154699 Evaluation of the feasibility of Uu transport for V2V ZTE discussion
R2-154700 Enhancements for eNB type RSU and UE type RSU ZTE discussion
R2-154701 Some considerations on multi-cell multicast/broadcast for V2X ZTE discussion
R2-154800 RAN2 aspects of V2X Qualcomm Incorporated discussion

Withdrawn:
R2-154305 Discussion on Requirements and Potential Latency Related Issues for V2X Shenzhen Coolpad Technologies discussion

7.12 WI: Elevation Beamforming/Full-Dimension (FD) MIMO for LTE

(LTE_EBF_FD_MIMO; leading WG: RAN1; started: June. 15; target: June 16; WID: RP-151085)

Time budget: 0.5 TU

No contributions received.

7.13 WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN

(LTE_eMDT2-Core; leading WG: RAN2; started: Sep. 15; target: Dec 15; WID: RP-151611)

Time budget: 1 TU

Documents in this agenda item handled in the LTE Break Out session (see Annex I)

7.13.1 QoS Verification

R2-154083 Considerations on Enhanced QoS Verification Use Case CATT discussion
R2-154105 Queuing delay measurement Nokia Networks discussion
R2-154432 Procedure and Configuration for GBR Traffic QOS Verification ZTE Corporation discussion
R2-154455 Issues on reporting MDT measurement results per QCI LG Electronics Inc. discussion
R2-154549 UL Scheduling Delay Measurement Qualcomm Incorporated discussion
R2-154685 Configuration and report mechanism for UL PDCP queuing delay measurement Kyocera discussion
R2-154782 feMDT todo MediaTek Inc. discussion
R2-154863 Enhanced QoS Verification in feMDT Huawei, HiSilicon discussion
R2-154865 New MDT measurement introduced by feMDT Huawei, HiSilicon discussion

7.13.2 Coverage Optimization

R2-154084 Enhanced Coverage Optimization with eICIC CATT discussion
R2-154085 Draft LS on Enhanced Coverage Optimization with eICIC CATT LS out
R2-154106 Logged MDT data filtering due to IDC Nokia Networks discussion
R2-154446 On handling MDT measurement results impacted by IDC Samsung Telecommunications discussion
R2-154577 MDT with in-device interference LG Electronics France discussion

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late

R2-154683 Potential solutions for Logged MDT under IDC interference Kyocera discussion

R2-154831 Introduction of LoggedMeasurementResults filtering due to IDC Nokia Networks draftCR 36.331 12.7.0 B Rel-13 LTE_eMDT2-Core

R2-154864 Enhanced Coverage Optimization in feMDT Huawei, HiSilicon discussion

Withdrawn:

R2-154107 Introduction of LoggedMeasurementResults filtering due to IDC Nokia Networks CR 36.331 12.7.0 B Rel-13 LTE_eMDT2-Core

R2-154108 Introduction of LoggedMeasurementResults filtering due to IDC Nokia Networks CR 36.331 12.7.0 B Rel-13 LTE_eMDT2-Core

7.14 WI: Indoor Positioning Enhancements for UTRA and LTE

(UTRA_LTE_iPos_enh-Core; leading WG: RAN2; started: Sep. 15; target: Dec 15; WID: RP-151624)

Time budget: 1 TU

7.14.1 RAT-Independent positioning

Wi-Fi/BT/Barometric and Terrestrial Beacon Systems

Stage 2

R2-154735 RAT-Independent positioning enhancements NextNav draftCR 36.305 12.2.0 B Rel-13 UTRA_LTE_iPos_enh-Core

wrong WI code used in CR cover

revised to R2-154961

R2-154961 RAT-Independent positioning enhancements NextNav, Broadcom, AT&T and TeleCommunication Systems, Inc. draftCR 36.305 12.2.0 B Rel-13 UTRA_LTE_iPos_enh-Core

revision of R2-154735

- Intel asks why the WLAN and BT are combined. Should be separated to allow WLAN only but not preclude that both are used.
- Apple think what is captured follow on from what was studied where they presented a hybrid solution. It doesn't preclude one or the other to be used. Broadcom agree it captures what was done in the study.
- Nokia thinks the CR changes he definition of UE based, etc. If standalone is mentioned then that should be something it does without any involvement from the network.
- Apple think the WID mentions standalone. FFC requires that UE reports the method used to report the fix. 'UE based' is a UE based solution that requires network assistance.
- Trueposition shares Nokia's concern about standalone Trueposition understands that UE based definition today already includes standalone
- Qualcom wonder why DL and E-CID methods 'no' in the standalone column. Also support separation of WLAN and BT.
- NextNav clarify the column are positioning modes. For DL and E-CID, UE based is not supported today so not clear how it can be yes for standalone.
- Nokia think that it is no used for UE to report a 'standalone' position estimate without the network having provided any assistance. It will not meet regulatory requirement.
- Apple think the standalone method can meet the requirements with or without any network assistance.
- Qualcomm think the table update is not needed. All we need is a request and response defined.
- Huawei also prefer the UE assisted mode.

=> No standalone column to be added to the table. A noted added to clarify that Baro/WLAN/BT may be performed without network assistance.

- Intel problem with the combined WLAN/BT approach is that many IEs will not actually apply for the BT approach. LPP so far has been defined to have separate signalling for each method
- Nokia understand that the reference to MBS is a ATIS contribution. Qualcomm suggest that maybe we could reference a 3GPP document. NextNav explain the reference is to a

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very specific version and so can't change. Nokia ask what would happen if there was any change in future. NextNav explain we would have to change this reference to point to a new documents.
- Qualcomm: We should not explicitly refer to 'indoor'. How does TBS work without assistance data. NextNav this is the same for all new methods added.
- Qualcomm ask what measurements are sent back to the server in the network based, UE assisted measurements. NextNav explain this situation is the same for other RAT independent methods. Qualcomm: We need to define what is reported back either in a 3GPP spec or another spec. Would be ok if the measurement is defined in an ATIS standard or any other standard. NextNav we have used a code phase which is same as GPS. ATIS reference defines the signal.
- Nokia ask if RAN4 will define the measurement performance. NextNav think there will need to be a RAN4 work.
- Nokia prefers to not include the band of operation for TBS. NextNav ok to remove,
- Intel think the WLAN/BT separation issue may be addressed in the stage 3 to make it efficient. For stage 2 nit sure how to capture it. Qualcomm: Not sure why we combine WLAN and BT. Why these 2 items? Apple explain the reason is that BT is not self sufficient. NextNav ok to keep them separate in stage 2, but the hybrid approach should be allowed in stage 3. Trueposition also ok with keeping them separate as there are others that must be used in hybrids. Huawei agree.

=> Revision of stage 2 CR can be provided in R2-154981.

R2-154821 Introduction of WLAN, BT, Sensor, and UE autonomous positioning Qualcomm Incorporated discussion
- Intel agree that autonomous positioning looks straight forward. And measurements could be added to E-CID but prefer not to do it as it will be more complex if we network assistance in future.
- NextNav agree with final comment from Intel. It add complexity to add to E-CID.
- Apple things that the network must be able to differentiate between a UE that can meet regulatory requirements and one that can't.
- Trueposition support the autonomous positioning. For second approach see benefit to add WLAN/BT to E-CID. NextNav agree with Apple.
- Huawei prefer to use E-CID. Ericsson also agree.
- Nokia don't see a need for the server to request a position based on standalone. Qualcomm think it doesn't work today.
- Qualcomm explain in their solution the server sends one request and one response based on many method (UE implementation how to combine) but the NextNav approach will require several request/response and the server has to combine. Apple think with this method the network can't be certain that UE can meet the requirements. Broadcom think it is not necessary to combine WLAN/BT with other methods if WLAN/BT can meet the requirements.

=> Offline discussion to determine whether i/ to have a single request/response to autonomous or to have separate request for each method; and ii/ whether to add measurements to E-CID method. Effectively a compromise between R2-154821 and R2-154961. Aim to make a decision on Friday. (NextNav, Jerrome). Revision of stage 2 CR can be provided in R2-154981.

R2-154981 RAT-Independent positioning enhancements NextNav, Broadcom, AT&T and TeleCommunication Systems, Inc. draftCR 36.305 12.2.0 B Rel-13 UTRA_LTE_iPos_enh-Core
- Qualcomm think it is not acceptable to base the work on a tdoc submitted to ATIS. Would like a TBS approach based on a standard.
- Broadcom think this has been discussed before the WI has been approved.
- AT+T agree with Broadcom. Would like to see this go forward as a baseline.
- Intel think this is not what RAN2 can discuss.
- Apple is in favour of endorsing the CR but acknowledge the Qualcomm comment.
- Qualcomm: 3GPP cannot refer a 3GPP tdoc number in spec but this is what we are doing by referring an ATIS tdoc number.
- Ericsson agree this was discussed in RAN but think the outcome was not so clear.
- NextNav think the RAN was quite clear. This is part of the WI that RAN2 has been assigned to work on and there is no RAN1 time units for this.

=> CR is endorsed as a baseline running CR

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- Qualcomm object to having the ATIS document referenced in this document.

R2-154824 Introduction of WLAN, BT, Sensor, and UE autonomous positioning Qualcomm Incorporated draftCR 36.305 12.2.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover
R2-154372 WLAN/Bluetooth and Barometric Pressure positioning Apple Europe Limited draftCR 36.305 12.2.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover
R2-154091 On WiFi Positioning TruePosition Inc. discussion
R2-154416 Refine positioning of UE with assistance by nearby WLAN UEs III pCR
moved from 7.13.1 to 7.14.1
Above 4 Tdocs not treated

Stage 3

R2-154736 RAT-Independent positioning enhancements NextNav draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover
revised to R2-154962
R2-154962 RAT-Independent positioning enhancements NextNav, Broadcom, AT&T and TeleCommunication Systems, Inc. draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
revision of R2-154736
R2-154825 Introduction of WLAN, BT, Sensor, and UE autonomous positioning Qualcomm Incorporated draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover
Above 3 Tdocs not treated

✉ **Email discussion on CR to 36.355 on Indoor positioning. Intended outcome is endorsed CR to next meeting. (NextNav)**

Late

- Comeback to discuss potential LS to CT4 after stage 2 is agreed.

R2-154793 LS to CT4 on Indoor Positioning impacts to 29.171 NextNav LS out
LS to CT4 on Changes to TS 29.171 for new positioning methods Rel-13 UTRA_LTE_iPos_enh-Core
=> Approved

Withdrawn:

R2-154822 Introduction of WLAN, BT, Sensor, and UE autonomous positioning Qualcomm Incorporated CR 36.305 12.2.0 B Rel-13 UTRA_LTE_iPos_enh-Core
R2-154823 Introduction of WLAN, BT, Sensor, and UE autonomous positioning Qualcomm Incorporated CR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core

7.14.2 RAT-Dependent positioning

OTDOA/E-CID enhancements

same PCI problem, OTDOA

R2-154829 Introduction of OTDOA enhancements for the shared Cell-ID scenario Qualcomm Incorporated discussion
R2-154600 Discussion and evaluation on the same PCI case for OTDOA enhancements using time-domain separation method Huawei, HiSilicon discussion
R2-154602 Discussion and evaluation on using TP-specific signal sequences to distinguish small cells with same PCIHuawei, HiSilicon discussion
R2-154830 Introduction of OTDOA enhancements for the shared Cell-ID scenario Qualcomm Incorporated draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover
R2-154665 Introduction of OTDOA enhancements Intel Corporation draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover

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R2-154873 CR on using time-domain separation method to distinguish small cells with same PCI Huawei, HiSilicon draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
late
R2-154874 CR on using virtual PCI to distinguish small cells with same PCI Huawei, HiSilicon draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
late
Above 7 Tdocs not treated

RSTD quantisation error

R2-154312 Discussion on RAT-dependent enhancements ZTE Corporation other
revised to R2-154977
R2-154977 Discussion on RAT-dependent enhancements ZTE Corporation discussion
revision of R2-154312
- Huawei think we can also just consider a different mapping table. ZTE think that once we decide on the quantisation in the mapping table it is fixed. The scaling factor allows us to introduce other quantisation.
- Nokia think that RAN1 will ask RAN4 to decide on mapping table vs scaling factor
- Qualcomm think that were need neither but just an additional field that adds a finer granularity measure to add to the original measurement.
- Nokia think the signalling will be easy when RAN4 respond.
- Huawei think the WID clearly says we will add signalling to support resolution of 0.5 Ts.
- Huawei support Qualcomm's approach.
- ZTE think that 0.5 Ts is not good enough, particularly for vertical positioning.
- CATT think 0.5 Ts is equivalent to 5m.
- Huawei think we just need a mechanism to allow a finer resolution to be reported. Signalling can go beyond 0.5Ts.
- Nokia can't agree anything without a response from RAN4.

=> Revisit the issue when RAN4 has responded to the LS from RAN1 with details of what is required,
=> Noted.

R2-154712 LPP signaling support for OTDOA/ECID enhancement Ericsson discussion
late
R2-154604 Evaluation and discussion on reduce RSTD quantization error Huawei, HiSilicon discussion
R2-154837 CR for RSTD quantization error reduction ZTE Corporation draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
revised to R2-154840; wrong WI code used in CR cover
R2-154840 CR for RSTD quantization error reduction ZTE Corporation draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
revision of R2-154837; wrong WI code used in CR cover
R2-154875 CR for reduce RSTD quantization error Huawei, HiSilicon draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
late
Above 5 Tdocs not treated

PRS and CRS

R2-154608 Discussion and evaluation on using PRS and CRS for RSTD measurement Huawei, HiSilicon discussion
Not treated

same PCI problem - ECID

R2-154606 Discussion and evaluation on the same PCI case for E-CID enhancements Huawei, HiSilicon discussion
R2-154876 CR for using CSI-RSRP measurements to distinguish small cells with same PCI Huawei, HiSilicon draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
late
Above 2 Tdocs not treated

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inter-freq RSTD accuracy

R2-154826 Introduction of UE inter-frequency RSTD calibration accuracy reporting Qualcomm Incorporated discussion
R2-154828 Introduction of UE inter-frequency RSTD calibration accuracy reporting Qualcomm Incorporated draftCR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover
Above 2 Tdocs not treated

Withdrawn:
R2-154414 Refine positioning of Legacy UE with assistance by nearby ProSe-enabled UE III pCR Rel-13 UTRA_LTE_iPos_enh-Core
R2-154601 CR on using time-domain separation method to distinguish small cells with same PCI Huawei, HiSilicon CR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
R2-154603 CR on using virtual PCI to distinguish small cells with same PCI Huawei, HiSilicon CR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
R2-154605 CR for reduce RSTD quantization error Huawei, HiSilicon CR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core
R2-154607 CR for using CSI-RSRP measurements to distinguish small cells with same PCI Huawei, HiSilicon CR 36.355 12.4.0 B Rel-13 UTRA_LTE_iPos_enh-Core

7.14.3 Common and other aspects

No contributions received.

7.15 WI: LTE-WLAN RAN Level Integration supporting legacy WLAN

(LTE_WLAN_radio_legacy-Core; leading WG: RAN2; started: Sep. 15; target: Dec 15; WID: RP-151615)

Time budget: 1 TU

Incoming LSs

R2-154015 LS on New WI on LTE-WLAN RAN Level Integration supporting legacy WLAN (RP-151623; contact: Alcatel-Lucent) RAN LS in cc: RAN2Rel-13
=> Noted

R2-154713 LTE-WLAN aggregation for support of legacy WLAN Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Broadcom Corporation, AT&T, NextNav, Blackberry UK Limited discussion
- China telecom suggest to discuss the RRC flow first. Qualcomm ask if data can be send on DL as well. ALU answer that it is not precluded. Qualcomm ask if it is needed to send a traffic steering command. ALU answer that it is needed for tunnel establishment.
- CATT is think that WLAN and eNB are in different IP domains and it is impossible to set up a tunnel. ALU thinks this is covered by the WID. MediaTek think these questions can be addressed by SA3.
- Apple do see a benefit of keeping the LTE bearer connected.
- ALU explain that the existing WLAN infra allocates the UE IP address.
- Interdigital think we should avoid discussing questions regarding IP address allocation etc. Support proposal 1.
- Intel ask what the UE does if it receives packets from both. ALU think this should not happen but in the WI it is not precluded. Broadcom think nothing is broken if packets are received via either path. Apple think if packets are received via both then they are just provided to upper layers.
- Intel says the WID says switched bearer only. BlackBerry says the WID says "whilst there no bearer split at radio level it does not preclude per IP packet routing at higher layers " and hence nothing needed in RAN to support such bearer.
- Cisco think the proposal may not be efficient as resources are consumed when traffic is on WLAN.

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- ALU also point out that bearer needs to be maintained so that UL can be supported on LTE.
- ALU clarify that if we have a bearer switch then UE can decide whether to handle data on the bearer.

=> Noted

Agreements:
1: IPSec Tunnel can only exist when the UE is RRC Connected
2: RRCConnectionReconfiguration is used to switching bearer to the IPSec Tunnel and for switching back to LTE
3: The same UE feedback of the measurement metrics as with LWA L2 approach and LWI should also be used for the tunnel mode.
4: The same mobility concept already agreed for the existing WI can also be used for the IPSec tunnel mode.
5: Separate capability bit for UE that supports IPSec tunnelling mode.

=> Offline discussion to try to make progress on proposal 1
Proposal#1: The LTE configuration of a bearer is not released by the network even when the bearer is using the IPsec tunnel.
FFS Whether DL data may be received DRB while the IPSec tunnel is established.
1a: When the UL is not re-directed (i.e, still over LTE), UE shall continue to use the LTE UL as before and also corresponding RLC and PDCP status report from the network on the corresponding DL of the logical channel.

- ALU gave update on offline discussion. Most companies are ok with Proposal 1 but some companies would like to think more.
- Ericsson think that we should have an email discussion. Ericsson think it has not been discussed at length.
- MediaTeK has some sympathy for Ericsson's view but prefer not to have an email discussion. Qualcomm agree.
- BlackBerry think we can make a working assumption and Ericsson can check and come back to the next meeting.
- MediaTek has some implementation concerns.

R2-154240 Discussion on LTE-WLAN operation via IP tunnelling Nokia Networks discussion
=> Noted

Agreements
1: Capture the Stage-2 description of IP tunnelling architecture in a dedicated section of TS36.300.
2: Do not allow both IP tunnelling and LWA at the same time for the same UE in Rel-13.
3: eNB provides the UE with appropriate parameters for the establishment or reconfiguration of the IP Sec Tunnel.
4: SRBs are routed via LTE only

=> Draft LS to SA3 capturing all agreements from this meeting. LS should state that in this architecture there is no PDCP security. (ALU) R2-154907

R2-154907 Draft LS to SA3 on IPSec security mechanism for the IP tunnelling (Alcatel-Lucent) Alcatel-Lucent LS out Rel-13 LTE_WLAN_radio_legacy-Core
=> Bullets 6 and 7 are kept as per original agreements but with 'EPS' removed.
✓ => LS approved in R2-154915

R2-154714 IPsec Tunnelling for support of legacy WLAN Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Broadcom Corporation, AT&T, NextNav, BlackBerry UK Limited discussion
P1
- Huawei ask why we need to differentiate DRBs. ALU explain that the UE might have different PDN connections. Broadcom explain that using SPI to differentiate flows is the default way for IPSec. Qualcomm agrees with Huawei.
- BlackBerry think that this is needed for UL at least and DL it may be needed.

=> Noted

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Agreements
1 RAN2 assumption that at most 1 IPSec Tunnel per UE
2 Design requirement that the UE can have more than one EPS Bearer carried WLAN
FFS How the EPS Bearers are distinguished over WLAN
3 IPSec Tunnel establishment and moving a bearer to use the Tunnel can be independent procedures.
4 The UE shall autonomously release IPsec tunnel configuration and the use of it by the DRBs upon receiving the Handover Command.

=> Draft LS to SA3/SA2 to inform them of our assumptions and agreements. Ask them to confirm our assumption and decide how the EPS Bearers are distinguished over WLAN. To be conclude which actions are directed at which group. R2-154908 (ALU)

R2-154908 Draft LS to SA3/SA2 on RAN2 agreement Alcatel-Lucent LS out Rel-13 LTE_WLAN_radio_legacy-Core
- Withdrawn. Content covered in R2-154907

R2-154739 Support for both uplink and downlink over the IPsec tunnel BlackBerry UK Limited, Alcatel-Lucent, Alcatel-Lucent Shanghai Bell other
- Broadcom think there is no issue for the device to send data via either path.
- Nokia assumes that we have a flag to indicate whether traffic is via LTE or WLAN and all traffic goes to WLAN

=> IPsec tunnel solution shall also support uplink data for a DRB over IPsec/WLAN (in addition to downlink). eNB configures where the UL data is routed (WLAN/LTE). If routed via WLAN then all UL traffic of the DRB is offloaded to WLAN.

UL AMBR
- BlackBerry think UL AMBR is a system requirement and there are many features where this breaks. Broadcom think that this has been discussed in previous WIs and captures in various specs.
- Nokia think in this case all traffic comes via eNB and hence the eNB is meant to be responsible. BlackBerry think in this case the eNB is not scheduling

=> Come back to this issue in future meeting.
=> Noted

R2-154769 Overview of LTE-WLAN integration supporting legacy WLAN Ericsson discussion
R2-154710 Some considerations for LTE-WLAN RAN level integration supporting legacy WLAN MediaTek Inc. discussion
R2-154659 On flow control feedback for LTE WLAN radio interworking/aggregation TCL Communication Ltd. discussion
R2-154862 Discussion on LWA solution based on IPsec tunnelling Huawei,HiSilicon discussion
Above 4 Tdocs not treated

7.16 WI: Narrowband IOT

(NB_IOT-Core; leading WG: RAN1; started: Sep. 15; target: Mar. 16; WID: RP-151621)

Time budget: N/A

Documents in this agenda item handled in the LTE Break Out session (see Annex J)

Overall: At this meeting we need to determine the scope of the work. Which parts of LTE TSes to be reused, which parts are not applicable, which parts need change. Identification of issues and candidate solutions. The mindset should be that Requirements in TR 45.820 shall be fulfilled.

7.16.1 General

Organization etc, opportunity for rapporteurs to provide wise words. Review of requirements. Overall cross CP/UP aspects. Different levels of coverage NB-IOT / coverage classes.

R2-154174 Overview Ericsson discussion

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R2-154449 Update of battery life evaluation for light S1 architecture ZTE Corporation discussion
R2-154452 Exception report latency evaluation for light S1 architecture ZTE Corporation discussion
R2-154504 NB-IOT - Overview on Reusing of LTE L2/L3 Huawei, Hisilicon, Neul discussion
R2-154514 NB-IOT - Architecture Overview Neul discussion
R2-154527 Overall CP/UP Aspects Samsung Electronics Co., Ltd discussion
R2-154568 Considerations of NB-IOT requirements Nokia Networks other
R2-154720 Principles for NB-IoT: GERAN agreed Operator requirements on network sharing, cell barring and access control Deutsche Telekom AG discussion
R2-154722 Draft Idle Mode specification review for NB-IoTDeutsche Telekom AG, Huawei Technologies Co., Ltd., HiSilicon Technologies Co. Ltd, Neul Limited, Qualcomm Incorporated discussion
R2-154726 NB-IoT – Key requirements QUALCOMM CDMA Technologies discussion
R2-154772 L2-3 considerations for NB-IoT Alcatel-Lucent discussion
R2-154833 General L2/L3 impacts due to introduction of NB-IOT feature Intel Corporation discussion
R2-154856 NB-IoT - UE considerations QUALCOMM CDMA Technologies discussion
late
R2-154869 General assumptions to work on NB-IoT together with Rel-13 eMTC NTT DOCOMO, INC. discussion

7.16.2 Control Plane

7.16.2.1 System Information

System information contents and principles may be built on eMTC. However for CIOT the bandwidth will be even lower and there might be system configuration parameter differences due to different PHY layer.

R2-154170 NB-IOT System Information Ericsson discussion
R2-154388 System information impacts due to introduction of NB-IOT feature Intel Corporation discussion
R2-154515 NB-IOT - Broadcast of System Information Neul discussion
R2-154528 Discussion on System Information Design Samsung Electronics Co., Ltd discussion
R2-154854 System Information for NB-IOT QUALCOMM CDMA Technologies report
R2-154867 System information design for NB-IoT NTT DOCOMO, INC. discussion

7.16.2.2 Paging

Paging principles, Idle mode DRX, determination of paging occasion, other.

R2-154389 Paging impacts due to introduction of NB-IOT featureIntel Corporation discussion
R2-154424 Paging for NB-IoT MediaTek Inc. discussion
R2-154454 Discussion on paging procedure for NB-IoTZTE Corporation discussion
R2-154478 NB-IOT Paging and DRX Ericsson discussion
R2-154505 NB-IOT - Paging Optimization and Enhancement Huawei, Hisilicon discussion
R2-154507 NB-IOT - Design of Message Reading Indicator Huawei, Hisilicon discussion
R2-154529 Discussion on Paging Mechanism Samsung Electronics Co., Ltd discussion
R2-154853 Paging principles for NB-IOT QUALCOMM CDMA Technologies discussion
R2-154877 Paging in NB-IOTLG Electronics Inc. discussion
late
Withdrawn:
R2-154506 NB-IOT - Discussion on Paging Occasion Huawei, Hisilicon discussion

7.16.2.3 Other

What parts of RRC are applicable, need modification etc? Reduction of RRC signaling that is Not directly related to SA2 work on signaling reduction at small data transmission (which will be treated later, when SA2 have taken decisions).

R2-154390 RRC impacts due to introduction of NB-IOT feature Intel Corporation discussion
R2-154477 NB-IOT Mobility and measurements Ericsson discussion
R2-154508 NB-IOT - Cell Selection/Reselection and Measurement Huawei, Hisilicon discussion
R2-154516 NB-IOT - RRC Layer Overview Neul discussion
R2-154517 NB-IOT - Idle Mode Procedure Overview Neul discussion
R2-154530 Cell Selection and Reselection for NB-IOT Samsung Electronics Co., Ltd discussion

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R2-154587 Impact due to Gb / S1-Lite Interface choice Sony discussion
R2-154774 Applicability of RRC for NB-IoT Alcatel-Lucent discussion
R2-154801 Control Plane Aspects of NB-IOT Qualcomm Incorporated discussion
R2-154878 RRC Connection Control in NB-IOT LG Electronics Inc. discussion
late

7.16.3 User Plane

7.16.3.1 Random Access

Specification of the RACH procedure.

R2-154092 NB-IOT Random Access Ericsson discussion
R2-154462 Random Access Procedure for NB-IoT MediaTek Inc. discussion
R2-154509 NB-IOT - Random Access Process Huawei, Hisilicon discussion
R2-154531 Discussion on Random Access Procedure Samsung Electronics Co., Ltd discussion
R2-154540 Random Access procedure for Narrowband IOT ASUSTEK COMPUTER (SHANGHAI) discussion
R2-154855 Random Access for NB-IOT QUALCOMM CDMA Technologies discussion

7.16.3.2 Other

Do we *n*eed RLC AM? PDCP, can it be used as is? Segmentation, concatenation etc – can we reuse the current principles. DRX mechanisms. BSR – support for UL scheduling etc

R2-154169 NB-IOT User plane Ericsson discussion
R2-154391 User plane impacts due to introduction of NB-IOT feature Intel Corporation discussion
R2-154453 Discussion on LTE UP protocol for NB-IoT ZTE Corporation discussion
R2-154510 NB-IOT - RLC Layer Functions Huawei, Hisilicon discussion
R2-154511 NB-IOT - PDCP Layer Functions Huawei, Hisilicon discussion
R2-154512 NB-IOT - Scheduling Design Huawei, Hisilicon discussion
R2-154513 NB-IOT - Coverage Class Decision and Adaptation Huawei, Hisilicon discussion
R2-154518 NB-IOT - MAC Layer Overview Neul discussion
R2-154519 NB-IOT - HARQ Overview Neul discussion
R2-154520 NB-IOT - DRX in RRC_CONNECTED Mode Neul discussion
R2-154532 Design Considerations on User Plane Samsung Electronics Co., Ltd discussion
R2-154797 Considerations on User Plane functions for NB-IOT LG Electronics Inc. discussion
R2-154802 User plane aspects of NB-IOT Qualcomm Incorporated discussion
R2-154866 L2 protocol analysis for NB-IoT NTT DOCOMO, INC. discussion

7.17 Other LTE Rel-13 WIs

R2-154820 Discussion on the need of eNB awareness for EVS Qualcomm Incorporated discussion
Related to the LS from SA4 in R2-154019
late
- Panasonic think that the results in the paper are not enough to judge whether it is beneficial. It will have impact to provide this information to the eNB.
- CMCC support the intent to allow eNB to be aware of the codec and support also for other codecs.
- Nokia think it is not clear that the eNB will benefit. There is normally a mix of data and voip and the data users can benefit. Only case where there could be benefit is when all users are voice.
- DCM ask what the benefit would be, and what the eNB should do. Qualcomm clarify that admission control cold be adapted and admit more calls, but also agree that data users can benefit.
- Ericsson think for admission control the eNB needs to reserve resources for the maximum bit rate and it does not benefit much to know the packet size varies.
- Huawei see some benefits for the eNB to know, but may need to know more than just the codec such as codec rate.
- Vodafone think it should be clear there are benefits before we add signalling. Currently it is not clear what the benefits are.

=> No conclusion on whether there are any benefits.

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=> Noted

7.18 LTE TEI13 enhancements

Small Technical Enhancements affecting LTE Rel-13 that do not belong to any Rel-13 WI.

Note: A TEI enhancement proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

R2-154033 Restricting Unattended/Background Data Traffic Verizon, Alcatel-Lucent, Ericsson, MediaTek, Qualcomm discussion

- Samsung generally support the intention but note that some unattended traffic is important, e.g. some keep alive traffic. Can study further.
- BlackBerry share the view of Samsung and think blocking unattended traffic completely is not good. What is attended and unattended should be left to UE implementation. Think there are already enough tools to address these issue already.
- Ericsson the paper mentions that it is up to OS implementation what is attended and unattended.
- Intel think we should stick to what is required in AS which is to pass the flag to upper layers. See no big issue for this functionality.
- ALU think operating systems today can already do this categorisation and blocking. This is a network trigger to use the existing mechanism.
- ZTE think in PPI we have a mechanism that networks may ignore and this may be a mechanism that UEs may ignore.
- Vodafone support the intent. Concern different OS vendors will behave differently. Operators can't control this.
- DCM: Not against studying this. Wonder is existing barring mechanisms such as ACDC may be extended for this case.
- Sony support the intention but have concerns on impact to UE implementation and how operators may use it differently (e.g. not just in exception cases). Are we talking about UE behaviour or just passing a flag to upper layers
- Apple think the UE behaviour should be out of RAN2 scope. But we can have this in the toolbox.
- LG think we need some requirement from SA1 on service specific operation. Could be integrated with ACDC but would not want to change ACDC requirement. LG is supportive of the work but there is no harm to involve SA1.
- Verizon think the SA1 requirement is already clear. Qualcomm agree that it is already in SA1. Think operators can have some control over OS vendors.
- Telecom Italia agree we should discuss. The SA1 requirement is wider than what we specify here. Should have a clear architecture requirement from other groups.
- Vodafone not happy to leave behaviour to OS and would prefer clear OS behaviour.

=> Offline discussion for how to proceed (how can SA1 requirements be met, how do we involved SA1, etc). (Verizon)

- Verizon gave report from offline. The offline agreed to introduce this. Propose to have email discussion on how to give guidelines on UE behaviour and what to describe in the spec.
- Huawei think this does not prevent us from looking at other solutions for the same problem.
- Intel thought it was clear that the UE behaviour in RRC would be to pass it to upper layers. Other things left to OS vendor.
- ZTE ask if we agreed to have the mechanism with knowing the UE behaviour. Verizon explain the mechanism was agreed.
- Vodafone think we can take the CR as a baseline and have the email discussion.
- DCM think the main concern was not just the UE behaviour in receipt of the bit but also whether the network could be sure how the UE would behaviour. We need to understand this before agreeing.
- Telecom Italia agree with DCM. We have to clarify first the SA1 requirements before we agree out part on the radio interface.
- TeliaSonera share the concerns with DCM and TelecomItalia. We don't know what UEs will do and how users will be affected.
- Verizon think the SA1 requirement is clear and propose that it would only have affect in the home network and this would have to be clarified.

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- DT think there are many question to be discussed before we can agree.
- TeliaSonera ask about network sharing.
- DT think that 3GPP has had bad experiences in the past and we cannot agree this.
- AT+T think his isn't quite done.

=> Noted

=> Email discussion to clarify how the overall mechanism is expected to work. Other solutions, including those that may already exist in 3GPP, to address the problem can also be discussed. (Verizon)

R2-154144 Background Traffic Nokia Networks discussion

R2-154738 Access Restriction for Unattended Data Traffic Verizon draftCR 36.331 12.7.0 C Rel-13 TEI13

Above 2 Tdocs not treated

R2-154149 Paging optimization Huawei, HiSilicon draftCR 36.331 12.7.0 B revsion of R2-153912, which was technically endorsed in RAN2#91 Rel-13 TEI13

=> In principle agreed

R2-154344 Support for SRS switching among TDD Scells Huawei, HiSilicon discussion

- Huawei clarify that this has not yet been discussed in RAN1. Qualcomm ask if the performance gain has been discussed in RAN1. Huawei think the benefits are in captured in TR 36.814 from release 10.

=> Can be taken to RAN1 and RAN2 can discuss again when we have some direction from RAN1.

=> Noted

R2-154538 Discussion on Contention Resolution for Random Access due to Sidelink Data Arrival ASUSTEK COMPUTER (SHANGHAI), LG Electronics, Huawei, HiSilicon discussion

- Ericsson think this has been discussed in many meetings not agreed. Asustek explain there is no new information but is now proposed for TEI13 instead of R12 correction.
- ASUSTeK the gain is to avoid the UE sending an additional uplink transmission.
- LG think the UE can receive the SL grant as soon as possible and it is logical to send only SL grant when there is only SL data to transmit. Ericsson think there is no gain in delay as the eNB can send SL and UL grant in the same TTI. Huawei also think he UL grant is not needed.
- Ericsson would also like to understand when this might occur. It will not happen very often that the UE has only a single SL BSR. LG think they are independent and may not occur together.
- Offline discussion conclude need to learn more about the content of msg3. If it typically contains a SL-BSR only then can consider enhancements. Huawei think it is a normal case that SL-BSR is included in msg3. ASUSTeK think that it we can agree that SL-BSR only is in msg3 then most people can agree SL-RNTI is natural.
- Nokia think that this has been discussed for a long time. Can we expect much progress.

=> Can be revisit at next meeting if there is progress in offline discussions until next meeting.

=> Noted

R2-154539 Discussion on Contention Resolution for Random Access due to Sidelink Data Arrival ASUSTEK COMPUTER (SHANGHAI), LG Electronics, Huawei, HiSilicon draftCR 36.321 12.7.0 C Rel-13 LTE_ D2D_Prox-Core, TEI13

wrong WI code used in CR cover: TEI13 needs to be added

=> Not treated following discussion of R2-154538

R2-154747 White-list of cells for EUTRA measurement reporting Ericsson pCR 36.331 12.6.0 Rel-13 TEI13

wrong Type used; it should be "draftCR"

- Intel ask if the white list can be applied to all events and not just A4 and A6. Ericsson agree that is how the CR is specified. There is no need to restrict it. Qualcomm think we agreed last time go with the generic approach.
- Nokia CR is missing changes to section on measurement report, and on the update of the white list. The coversheet says it applies to carriers aggregation from a single eNB, does

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this preclude cases of aggregating cells of different eNB. Ericsson explain there is no restriction.
- Qualcomm ask if this only affects event triggering but content of the report is not affected by the list. Can take a similar approach to that taken for black listed cells
- Ericsson clarify that optional/mandatory has not yet been discussed. At least it is needed for CA capable UEs. Huawei think we need a capability signalling.

=> CR cover page can explain main motivation and state that he solution does not restrict the usage.
=> UE behaviour needs to be specified in measurement report triggering section.
=> UE capability signalling to be added.
=> Other aspects can be discussion offline.
=> Revision in R2-154980
=> 36.306 CR can be provided at next meeting,

R2-154980 White-list of cells for EUTRA measurement reporting Ericsson draftCR 36.331 12.7.0 Rel-13 TEI13
=> Postponed

8 UTRA Release 10 and earlier releases

R2-154098 Clarification of physical channel combination for DC-HSUPA and MC-HSDPA Nokia Networks draftCR 25.302 10.2.0 F Rel-10 RANimp-DC_HSUPA, 4C_HSDPA
=> The CR is in principle agreed

R2-154946 Clarification of physical channel combination for DC-HSUPA and MC-HSDPA Nokia Networks draftCR 25.302 11.x.x F Rel-11 RANimp-DC_HSUPA, 4C_HSDPA, 8C_HSDPA
=> For the collision case with the DC HSUPA, we will indicate that a collision with the table is occuring
=> The CR is in principle agreed

9 UTRA Release 11

(Cell_FACH_enh-Core, leading WG: RAN2, REL-11, started: March 11, closed: Dec. 12, WID: RP-111321)

(HSDPA_MFTX-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111375)

(4Tx_HSDPA-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111393)

(MIMO_64QAM_HSUPA-Core, leading WG: RAN1, REL-11, started: Dec. 11, closed: Dec. 12, WID: RP-121794)

(rSRVCC-RAN_UTRA-Core, leading WG: RAN3, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111334)

(HSPA_UL_TxDiv-CL-Core, leading WG: RAN1, REL-11, started: Dec.10, target: Dec.12, WID: RP-120367)

(HSPA_UL_TxDiv-OL-Core, leading WG: RAN4, REL-11, started: Dec.10, closed: Dec. 12, WID: RP-120367)

(8C_HSDPA-Core, leading WG: RAN1, REL-11, started: Dec.10, closed: Sep. 12, WID: RP-101419)

Including corrections for UTRA functionality introduced as TEI11.

R2-154099 Clarification for configuring CQI and HARQ A/N repetition with Multiflow Nokia Networks discussion
=> For ACK-NACK repetition factor, we will follow the same behaviour as for CQI repetition factor - the network includes only IEs "ACK-NACK repetition factor", and a UE automatically applies the same repetition factor to the assisting cells
=> Noted

R2-154938 Clarification for configuring HARQ A/N repetition with Multiflow Nokia Networks discussion
=> The CR is agreed in principle

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10 UTRA Release 12

10.1 WI: Further EUL Enhancements

(EDCH_enh-Core, leading WG: RAN2, REL-12, started: Dec. 13, **closed**: Dec. 14, WID: RP-140127)

R2-154074 Group based access control with seamless transition from CELL_PCH Nokia Networks discussion
- Huawei agrees on preventing the measurement report if DTCH is blocked, but we should not control the CELL UPDATE message.
- Huawei thinks that this is a new feature and not a correction.

=> The UE should not transmit CELL UPDATE with a cause value "UL data" when DTCH is blocked for non-seamless CELL/URA PCH transitions
=> A UE shall not initiate Measurement report that is triggered due to UL DTCH data transmission when DTCH is blocked
=> Noted

R2-154189 Discussion on DTCH transmisison control due to access group mechanism Huawei, HiSilicon discussion
=> Noted

R2-154190 Correction on DTCH transmisison control due to access group mechanism Huawei, HiSilicon draftCR 25.331 12.7.0 F Rel-12 EDCH_enh-Core
wrong spec ver number used in CR cover; it should be 12.7.0
- Qualcomm would like to ensure that the measurement report is only blocked in the case of UL data transmissions

=> The CR is revised in R2-154939

R2-154939 Correction on DTCH transmisison control due to access group mechanism Huawei, HiSilicon draftCR 25.331 12.7.0 F Rel-12 EDCH_enh-Core
=> The CR is postponed

R2-154202 Correction on DTCH transmisison control due to access group mechanism Huawei, HiSilicon draftCR 25.331 13.0.0 A Rel-13 EDCH_enh-Core
wrong spec version number used in CR cover: it should be 13.0.0
=> The CR is not treated

10.2 WI: Enhancements to SIB

(UTRA_SIBenh-Core, leading WG: RAN2, started: Dec. 13, **closed**: Sep 14, WID: RP-140131)

No contributions received.

10.3 WI: UMTS Heterogeneous Networks enhancements

(UTRA_hetnet_enh-Core, leading WG: RAN1, started: Dec.13, **closed**: Sep. 14, RP-140463)

No contributions received.

10.4 WI: DCH Enhancements for UMTS

(UTRA_DCHenh-Core, leading WG: RAN1, started: Sept.13, **closed**: Sep. 14, RP-131357)

No contributions received.

10.5 WI: WLAN/3GPP Radio Interworking – UTRA aspects

(UTRA_LTE_WLAN_interw-Core, leading WG: RAN2, REL-12, started: Dec.13, **closed**: Sep. 14, WID: RP-132101)

R2-154298 Corrections to WLAN/3GPP radio interworking Intel Corporation draftCR 25.331 12.7.0 F Rel-12 UTRA_LTE_WLAN_interw-Core

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=> Unclick RAN box and delete “The CR does not introduce any functional changes” from the impacted functionalities
=> The CR is in principle agreed with the changes above in R2-154954

R2-154299 Corrections to WLAN/3GPP radio interworking Intel Corporation draftCR 25.304 12.6.0 F Rel-12 UTRA_LTE_WLAN_interw-Core
- QC wonders if camped normally can include more than the UE being camped in a suitable cells. If we keep camped normally, we should align the terminology to 25.304 and refer to a camped normally “state”.
- QC indicates that camped normally occurs after registration is successful and wonders if we want the UE to apply the parameters before successful registration, e.g. when camped in a suitable cell.
- Nokia Net wonders if there is any impact to leaving the third bullet point in the specs. Intel thinks that it is redundant.

=> The CR is revised in R2-154947

R2-154947 Corrections to WLAN/3GPP radio interworking Intel Corporation draftCR 25.304 12.6.0 F Rel-12 UTRA_LTE_WLAN_interw-Core
=> Unclick the box for RAN
=> With this change the CR is in principle agreed in R2-154948

10.6 WI: Increasing the minimum number of carriers for UE monitoring in UTRA and E-UTRA

(LTE_UTRA_IncMon-Core, leading: RAN4, REL-12, started: Dec.13, **closed**: Dec. 14, WID: RP-132061)

No contributions received.

10.7 Other UMTS Rel-12 WI/SIs

Input to any other Rel-12 WI/SI not explicitly listed above.

(UTRA_hetnet_mob-Core, leading WG: RAN2, Started: Dec.13, closed: June 14, WID: RP-140463)

(LCS_BDS-UTRA-Core, leading WG: RAN2, started: March 13, closed: Dec.13, WID: RP-130416)

(EHNB_enh3-Core, leading WG: RAN3, REL-12, started: Sep.12, closed: Dec 13, WID: RP-130741)

(LCR_TDD_HSPA_sign_enh-Core, leading WG: RAN1, started: Dec 12, closed: Dec 13, WID: RP-121984)

(LTE_UTRA_SDL_BandL-Core, leading WG: RAN4, started: June 13, target: June 14, WID: RP-140092)

Including corrections for UTRA functionality introduced as TEI12.

No contributions received.

11 UTRA Release 13

11.1 WI: L2/L3 Downlink enhancements for UMTS

(UTRA_EDL_L23-Core, leading WG: RAN2, started: June 15, target: Dec. 15, WID: RP-151043)

Time budget: 4 TUs

11.1.1 Retrievable configurations

Contributions should focus on the solutions discussed and concluded in the SI phase

R2-154207 Retrievable configurations Ericsson discussion
How the retrievable configuration is provided

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- Nokia Net wonders how the UE stores the configuration. Nokia Net would like to ensure that the RRC specification impacts are not too much when we combine the two proposals.

How the retrievable configuration is activated

Proposal 2: Retrievable configurations stored in the UE can be modified, either fully or partly.

- Nokia Net wonders how the modification can be performed. Ericsson thinks that we can signal the delta. Qualcomm indicates that we can give the ID of the configuration and the new parameters.
- Nokia Net thinks that is important to erase a configuration.

Proposal 5: The parameters in the table above are included in retrievable configurations.

- Blackberry wonders why we have named some IEs as retrievable. Ericson will check
- Huawei wonders why we include RAB as in the study we don't include it.

Proposal 6: The UE should be able to store 16 different retrievable configurations.

- Qualcomm has concerns on the number of configurations stored and thinks that 8 retrievable configurations are acceptable and signal up to 2 per message simultaneously. Ericsson would prefer 16.
- Nokia Net would like to see if we can consider up to 4 per message simultaneously. If the network wants to provide multiple configurations then we would need three RRC messages.

Proposal 8: Retrievable configurations can be provided and/or used in the RRC messages Cell Update Confirm, Physical Channel Reconfiguration, Radio Bearer Reconfiguration, Radio Bearer Release, Radio Bearer Setup and Transport Channel Reconfiguration.

- Qualcomm wonders why for radio bearer release. Ericsson indicates that it is for the case of multiple RABs.

=> Noted

R2-154215 Discussion on open issues for retrievable configuration Huawei, HiSilicon discussion

=> Noted

R2-154100 Retrievable configurations for CELL/URA_PCH Nokia Networks discussion

- Qualcomm wonders what the UE doesn't with the index. Nokia Net thinks that the main motivation is for the seamless transmission.

=> Noted

Agreements:

- Retrievable configurations can be stored and provided in two ways:
  1. As a results of a RRC reconfiguration procedure the UE stores the received configuration as a retrievable configuration
  2. The network preconfigures in advance at least one retrievable configuration
- Retrievable configurations stored in the UE can be modified either:
  1. Fully – a configuration is fully overwritten
  2. Partly as a baseline – Only a subset of the configuration is modified and the other part of the configuration remains unchanged. Removal of part of the configuration is not allowed. Addition of new parameters to an existing configuration are allowed.
- A retrievable configuration can be deleted completely
- The structure of the "Retrievable configurations" is FFS
- The UE should be able to store 8 different retrievable configurations. FFS how many configurations per messages
- The UE should clear the retrievable configurations when going to RRC Idle mode and at SRNS relocation
- Retrievable configurations can be provided and/or activated in the RRC messages Cell Update Confirm, Physical Channel Reconfiguration, Radio Bearer Reconfiguration, Radio Bearer Release, Radio Bearer Setup and Transport Channel Reconfiguration
- The solution for retrievable configurations should be for dedicated signalling only
- The UE can keep/store retrievable configuration provided in CELL_FACH, CELL_DCH while in CELL_PCH and URA_PCH
- The network should be able to signal a retrievable configuration index to use while moving a UE to CELL_PCH or URA_PCH

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Not treated

R2-154208 Retrievable configurations Ericsson draftCR 25.300 12.4.0 B Rel-13 UTRA_EDL_L23-Core
wrong WI code used in CR cover; It should be "UTRA_EDL_L23-Core"

R2-154209 Retrievable configurations Ericsson draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec number & WI code used in CR cover; It should be "UTRA_EDL_L23-Core"

R2-154216 CR to 25.331 on retrievable configurations Huawei, HiSilicon draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

Email discussion

✉ **[UMTS/Retrievable configuration] Running CRs (Huawei)**
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331 and 25.300
- Review running CR, provide comments and capture all open issues for input in the next meeting
- Deadline Nov. 5th

11.1.2 Seamless URA_PCH to CELL_FACH transitions

Seamless URA_PCH to CELL_FACH transitions (with or without RNTI extension)

R2-154073 Further considerations on seamless transition from URA PCH Nokia Networks discussion
=> Noted

R2-154217 Discussion on open issues for seamless transition from URA_PCH to CELL_FACH state Huawei, HiSilicon discussion
- *Proposal 1: It is proposed RAN2 to agree that a UE shall be configured with C-RNTI and the C-RNTI is not unique in the configured URA.*

- Nokia Net wonders why it is not unique, it could be problematic. Huawei thinks that the C-RNTI is not used so it is ok it is not unique. Ericsson thinks that we shouldn't store the C-RNTI at all since it is not needed. Nokia Net thinks that removing it is a big change to the philosophy of how the system is run. This way of operating has been working so it may be better to keep the same assumptions, that C-RNTI is needed.
- Nokia Net thinks that the C-RNTI allocation can be up to network implementation.

Proposal 4: It is proposed RAN2 to agree the UE shall not perform fallback to R99 PRACH if it performs seamless transition from URA_PCH to CELL_FACH state.

- Nokia Net and Ericsson would like to make use of R99 fallback. Chair thinks that the if C-RNTI is unique within the URA the feature can be used.

Proposal 5: It is proposed RAN2 to agree the UE shall perform cell update procedure in the non-matching RLC parameters scenario for the UE supports seamless transition from URA_PCH to CELL_FACH state.

- Nokia Net wonders why we didn't solve the issue in a similar way. Huawei indicates that it is a different use case as the network is not aware of the target cell of the UE.
- Ericsson agrees with the proposal.

Proposal 7: It is proposed RAN2 to agree access control in connected mode can be applied for the UE in URA_PCH (with seamless transition to CELL_FACH) state.

- Ericsson indicates that this was agreed in TEI13

=> Noted

R2-154616 Discussion on certain aspects of Seamless URA_PCH to CELL_FACH transition Ericsson LM discussion
=> Noted

Agreement
- A URA_PCH when a UE supporting the HSDPA-based paging will expect the PCCH message (PAGING TYPE 1) mapped to HS-PDSCH and will not monitor HS-SCCH for paging purposes.
- A UE shall be configured with C-RNTI, dedicated H-RNTI and E-RNTI to

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perform seamless transition from URA_PCH to CELL_FACH state when the UE and network support common E-DCH
- The combination of seamless of URA_PCH to CELL_FACH and R99 PRACH s allowed
- The UE performs cell update procedure in the non-matching RLC parameters scenario for the UE supports seamless transition from URA_PCH to CELL_FACH state
- A UE supporting Seamless URA_PCH transition to CELL_FACH shall also support "E-DCH transmissions in CELL_FACH state and Idle mode". Seamless URA_PCH to CELL_FACH transition is not supported for R99 RACH/FACH

Not treated

R2-154218 CR to 25.301 on seamless transition from URA_PCH to CELL_FACH state Huawei, HiSilicon draftCR 25.301 12.0.0 B Rel-13 UTRA_EDL_L23-Core

R2-154219 CR to 25.331 on seamless transition from URA_PCH to CELL_FACH state Huawei, HiSilicon draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

R2-154618 Introduction of Seamless URA_PCH to CELL_FACH transition Ericsson LM draftCR 25.308 13.0.0 B Rel-13 UTRA_EDL_L23-Core
late

R2-154619 Introduction of Seamless URA_PCH to CELL_FACH transition Ericsson LM draftCR 25.319 12.3.0 B Rel-13 UTRA_EDL_L23-Core
late

R2-154624 Introduction of Seamless URA_PCH to CELL_FACH transition Ericsson LM draftCR 25.321 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec ver number used in CR cover; it should be 13.0.0; late

R2-154626 Introduction of Seamless URA_PCH to CELL_FACH transition Ericsson LM draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
Late

Email discussion

✉ **[UMTS/Seamless URA_PCH] Running CRs – Huawei**
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331, 25.300, 25.301
- Review running CR, provide comments and capture all open issues for input in the next meeting
- Deadline Nov. 5th

11.1.3 RNTI extension mechanisms

RAN2 specific aspects related to extending RNTI? What states is this extension applicable to?

R2-154101 Alternative view on RNTI space extension Nokia Networks discussion
=> Given the complexity of the solutions and the lack of consensus on the solution we will down prioritize this topic until next meeting
=> Noted

Not treated

R2-154102 Further analysis of solutions for extending the RNTI space Nokia Networks discussion

R2-154220 Discussion on open issues for RNTI extension Huawei, HiSilicon discussion

R2-154221 CR to 25.331 on RNTI extension Huawei, HiSilicon draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

R2-154222 CR to 25.321 on RNTI extension Huawei, HiSilicon draftCR 25.321 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

11.1.4 Improved HARQ retransmission

R2-154229 Discussion on open issue for blind HARQ retransmissions for HSDPA Huawei, HiSilicon discussion

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- Ericsson wonders what the trigger for blind retransmission is. Huawei explains that one example trigger can be on the type of data.

=> The working assumptions from last meeting are confirmed
=> The combination of blind HARQ retransmission and DL MIMO is not allowed
=> Noted

R2-154230 CR to 25.331 on blind HARQ retransmissions for HSDPA Huawei, HiSilicon draftCR
25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

=> Change the wording of HARQ blind retransmission definition to better align with the MAC specification

- Nokia Net wonders if we allow this operation for both MAC-hs and MAC-ehs.
- Qualcomm wonders how the support of the feature is signalled. Huawei indicates that there is will be a capability bit and there will be a network configuration for the UE to start. Ericsson thinks that if the UE supports it, it should be ready to receive all the time and it doesn't need to explicitly configure the UE. Nokia net thinks that both solutions work but the one from Huawei is more UE friendly. Huawei thinks that it may impact battery life. Nokia Net thinks that even if it is configured doesn't mean it will be used. Huawei indicates that if RNC configures it, it will likely use it.

=> FFS if there needs to be a RRC configuration from the network to the UE. The impact to the UE should be investigated.
=> The CR is postponed

R2-154231 CR to 25.321 on blind HARQ retransmissions for HSDPA Huawei, HiSilicon draftCR
25.321 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

=> Remove "the"
=> The CR is postponed

11.1.5 Autonomous state transitions

R2-154103 Initial considerations for the autonomous state transition Nokia Networks discussion
revised to R2-154881

R2-154881 Initial considerations for the autonomous state transition Nokia Networks discussion
revision of R2-154103

- Ericsson thinks that we should have an option to allow a full pre-configuration to avoid mandating the support of retrievable configuration in the UE. Qualcomm thinks that it would be preferable not to the link the two.
- Ericsson thinks that we need to pre-configure the cell id and ura id

=> Noted

R2-154770 Enhanced RRC state transition based on Fast Dormancy procedure BlackBerry UK Limited discussion

- Ericsson agrees that the race condition problem are removed with the solution.
- Ericsson thinks that with this solution the network may have to pre-configure the UE with the information required for the state. BlackBerry thinks that a state indication can be used in the small RRC message.
- Nokia Net thinks that the new solution looks now very similar to the old procedure with a new message. The signalling overhead doesn't seem to be reduced. Blackberry thinks that we would get a gain from a smaller message size and by avoiding reconfiguration complete. Nokia Net thinks that the message size can grow depending on the state the UE is sent and how much information needs to be sent. Qualcomm shares the view of Nokia Net.
- Ericsson thinks that without this confirmation there will still be a race condition and a state mismatch. Nokia Net thinks that if the network knows what the UE is doing then the behaviour is predictable.
- Qualcomm thinks that we already accepted the trade-off during the study item. Blackberry thinks that we shouldn't be introducing something that results in a race condition.

=> Noted

R2-154223 Discussion on open issues on enhanced state transition Huawei, HiSilicon discussion
=> Noted
Discussions

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Options:
Option 1: Legacy "fast dormancy" + autonomous state transitionOption 2: Inactivity timer + autonomous state transition
Option 3: RRC confirmation message after the UE sends the SCRI
- sub option: network configures whether you should expect a RRC confirmation
Option 4: Inactivity time (with option to set it to zero) + RRC configuration on whether UE should perform autonomous state transition or wait for a RRC configuration message (e.g. new RRC confirmation message or RRC reconfiguration message).
Option 5: Do nothing

- Blackberry wonders in what scenarios option 2 is used and how it is configured. Nokia Net thinks that option 2 can be useful for the network to have some predictability, as it is not aware of how the UE triggers the SCRI. - Blackberry is concerned with this new behaviour as in some cases the trigger may not be too aggressive and adding extra delay may not be desirable. Nokia Net thinks that nowadays the network may still wait for a given period of time before reconfiguring so essentially the behaviour will be the same. Qualcomm indicates that option two with timer zero would correspond to legacy SCRI trigger.
- Huawei prefers option 1.
- Ericsson thinks that option 1 and 1a can co-exist and there can be an option that the network configures the UE whether it should wait for a RRC confirmation or not.
- Qualcomm thinks that option 2 would provide more of an enhancement and would prefer that option.
- Qualcomm wonders if we have a 5th option to do nothing

Transition States
CELL_DCH-to-CELL_FACH , CELL_FACH-to-CELL/URA_PCH, CELL_DCH-to-CELL/URA_PCH
- Blackberry wonders when you would support the first scenario. Nokia Net thinks that we can do this today with the SCRI, first send the UE to CELL_FACH and then to CELL_PCH.
- Blackberry wonders if we can enable simultaneously two steps in one configuration. Nokia Net thinks we can signal two steps with the suggested signalling. Qualcomm thinks we should allow it and if there are risks the network has the choice to signal the steps.

Messages to use for configuration
- Blackberry wonders if we have to provide the configuration in every dedicated message and if we can have a static behaviour. Nokia Net thinks that we should have some flexibility.

=> Noted

Agreements:
- The UE can be configured to transition to CELL_DCH-to-CELL_FACH, CELL_FACH-to-CELL/URA_PCH, CELL_DCH-to-CELL/URA_PCH
- The network can pre-configure the full configuration to the new state or it can use an index to a retrievable configuration (if the UE supports retrievable configuration)
- The configuration will be provided to the UE with the following messages: CELL UPDATE CONFIRM, RADIO BEARER SETUP, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, TRANSPORT CHANNEL RECONFIGURATION, FFS for PHYSICAL CHANNEL RECONFIGURATION

R2-154224 CR to 25.331 on enhanced state transition Huawei, HiSilicon draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0
=> Not treated

11.1.6 Improved synchronize RRC procedures

R2-154203 Improved synchronized RRC procedures Ericsson discussion
- Nokia Net wonders what happens in the error cases NACK to ACK and ACK to NACK misinterpretation.

=> Noted

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R2-154225 Discussion on open issues on improved synchronized RRC procedure Huawei, HiSilicon discussion
Late
Withdrawn

R2-154226 Discussion on open issues on improved synchronized RRC procedure Huawei, HiSilicon discussion
Proposal 1: It is proposed RAN2 to introduce a new message type in the UL MAC Control information and this type indicates ready.

- Ericsson thinks that a transaction ID should be introduced. Nokia Net thinks that a transaction ID makes sense but in the RRC spec the transaction ID is 4 bits and the in the MAC CR it is 2bits.
- Nokia Net wonders if the transaction ID is procedure specific.

Proposal 6: It is proposed RAN2 to discuss whether the following RRC message should be considered to apply solution 1: CELL UPDATE CONFIRM, HANDOVER FROM UTRAN COMMAND

- Ericsson wonders if we should allow it for active set update.

=> Noted

Agreements:

- A new UL MAC control element will be introduced, which will include the transaction ID of the reconfiguration message and procedure type. FFS on the number of bits required.
- A time offset is signalled to the UE to calculate the new activation time. How the feature is activated is FFS
- The UE will activate the new configuration if the UE fails to receive HARQ ACK before the legacy activation time or the enhanced activation time is later than the legacy activation time.
- The new time offset is only included when the IE "activation time" is not set to "now"
- The UE calculates the activation time T by adding the value of time offset to the current CFN when it receives the HARQ ACK
- The feature is only applicable to CELL_DCH state
- The enhancement is not applicable to Handover from UTRAN message.
- The enhancement will also be applied to ACTIVE SET UPDATE in addition to the other reconfiguration messages.

✉ **[UMTS/Improved synchronized RRC procedures] Running CRs – Huawei**

- Capture all RAN2 agreements made up to and including RAN291bis in 25.331, 25.300, 25.321.
- Review running CR, provide comments and capture all open issues for input in the next meeting
- Deadline Nov. 5th

=> LS to RAN3 on DL enhancements

- Capture agreements on synchronized procedures, extended RNTI down prioritization , and blind HARQ retransmissions

R2-154940 draft LS to RAN3 on DL enhacements Huawei, HiSilicon LS out from: RAN2 to: RAN3 Rel-13 UTRA_EDL_L23-Core
✓ => The LS is approved in R2-154955

R2-154204 Improved synchronized RRC procedures Ericsson draftCR 25.300 12.4.0 B Rel-13 UTRA_EDL_L23-Core
wrong WI code used in CR cover; It should be "UTRA_EDL_L23-Core"
=> Not treated

R2-154205 Improved synchronized RRC procedures Ericsson draftCR 25.321 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spc ver number & WI code used in CR cover; It should be "UTRA_EDL_L23-Core"

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- Nokia Net thinks that the behaviour of the MCI HARQ operation should follow the same as the rel-12 MCI behaviour.
- Nokia Net thinks that we should change the name of the “Dynamic Activation Time Determination” as we are not determining the activation time in this section.

=> The CR is postponed

Not treated

R2-154206 Improved synchronized RRC procedures Ericsson draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec number & WI code used in CR cover; It should be "UTRA_EDL_L23-Core"

R2-154227 CR to 25.331 on improved synchronized RRC procedure Huawei, HiSilicon draftCR 25.331 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

R2-154228 CR to 25.321 on improved synchronized RRC procedure Huawei, HiSilicon draftCR 25.321 13.0.0 B Rel-13 UTRA_EDL_L23-Core
wrong spec version number used in CR cover; it should be 13.0.0

11.1.7 Other

R2-154072 Latency reduction for uplink signalling Nokia Networks discussion
=> No support
=> Noted

R2-154210 CR to 25.300 on L2 and L3 Downlink enhancements Huawei, HiSilicon draftCR 25.300 12.4.0 B Rel-13 UTRA_EDL_L23-Core
=> Not treated

R2-154213 CR to 25.308 on L2 and L3 Downlink enhancements Huawei, HiSilicon draftCR 25.308 13.0.0 B Rel-13 UTRA_EDL_L23-Core
=> Not treated

R2-154214 CR to 25.319 on L2 and L3 Downlink enhancements Huawei, HiSilicon draftCR 25.319 12.3.0 B Rel-13 UTRA_EDL_L23-Core
=> Not treated

R2-154781 Release of dedicated RNTIs Nokia Networks discussion
=> No support
=> Noted

11.2 WI: Power saving enhancements for UMTS

(UTRA_SDATA_POWSAV-Core, leading WG: RAN2, started: June 15, target: Mar 2016, WID: RP-151092)

Time budget: 2 TUs

11.2.1 Extended DRX mechanisms in Idle mode

R2-154479 Extended DRX in Idle mode Ericsson discussion
- NN: we think TeDRX should be transparent to RAN, so do we need to discuss values in RAN2?
- ERI: this is a typical RAN2 discussion, and we should indicate to CT1 at least the range
- NN: on Tptw, we assumed that RAN would be transparent
- ERI: no, RAN should be informed about Tptw, as described in the paper (signalling from CN). Nevertheless, RAN can also ignore such info. SA2 endorsed CRs did also include such assumption.
- NN: if RAN ignores the signalled Tptw, would the functionality still work?
- ERI: this should be more a SA2/RAN3 discussion.

=> Noted

Agreements:

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- T_{eDRX} timer range is from ~10 to 1hr. Granularity is FFS (RAN2 will ask CT1)
- T_{PTW} min and max values should be 2 seconds and 30 seconds. Granularity is FFS (RAN2 will ask CT1)
- When the timer T_{eDRX} expires the UE shall re-acquire MIB to check for system information changes before accessing the system.

R2-154595 Stage 3 impacts for Idle eDRX Huawei, HiSilicon discussion
=> Noted

R2-154480 LS on extended DRX in Idle mode in UMTS Ericsson LS out
- Change to 1hr Tedrx
- Remove ref to tech endorsed CRs in SA2 actions
- ask CT1 about granularity of parameters

=> LS revised in R2-154941
=>check if RAN3 should be in CC.

R2-154941 LS on extended DRX in Idle mode in UMTS Ericsson LS out from: RAN2 to: SA2, CT1, RAN4 cc:RAN3 Rel-13 UTRA_SDATA_POWSAV-Core
- Qualcomm wonders if we are giving a recommendation to the granularity of eDRX value within min and max values. Ericson thinks that CT1 can decide and they can provide input in the next meeting. Ericsson confirms that these values do not impact the RRC spec.

✓ => the LS is approved in R2-154943

R2-154493 Introduction of extended DRX in Idle mode Ericsson draftCR 25.300 12.4.0 B Rel-13 UTRA_SDATA_POWSAV-Core
wrong WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"

R2-154494 Introduction of extended DRX in Idle mode Ericsson draftCR 25.304 12.6.0 B Rel-13 UTRA_SDATA_POWSAV-Core
wrong WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"

R2-154495 Introduction of extended DRX in Idle mode Ericsson draftCR 25.331 13.0.0 B Rel-13 UTRA_SDATA_POWSAV-Core
wrong spec number & WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"

- The above CRs were not treated, and will be discussed over email

=> EMAIL DISCUSSION (until next meeting)

✉ **[UMTS/eDRX] Running stage 3 CRs - Ericsson**
- Intended Outcome: review stage-3 running CRs, to be provided as input to next RAN2
- Deadline: Nov. 4th

R2-154075 Sync error correction for extended DRX Nokia Networks discussion
- ERI: to make solution 4 work, there are some impacts on L2
- HW: in general, we would prefer the approach where the RAN is transparent. What is the main concern on the UE based solution?
- NN: from our side, ASN1 impact is the main concern
- HW: it could also be made UE implementation dependent (no ASN1 impact)

=> Noted

R2-154591 Further considerations for timer based eDRX in idle Huawei, HiSilicon discussion
- ERI: triggering the timer when UE moves to Idle was discussed in the past, and has drawbacks (UE moving to Idle may not always be deterministic). The proposed solution to recover from sync errors (relying on mulitple POs) may not always s work, i.e. some UEs may face issues.

=> Noted

Discussion on Sync error:
- ERI: we still see NN solution more complex (e.g. L2/L3 interaction); we also would like to avoid CN impacts, and involvement of RAN3&SA2.
- NN: we are strongly against ASN1 impact.About L2/L3 interaction issues, this is inside RNC, and it should be able to handle it (it already happens in today's implementation)

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- ERI: besides L2/L3 interaction, L2 handling also changes, which we don't like. WE are not so concerned on ASN1 impacts, e..g it's only one new IE.
- NN: ASN1 impacts means that it will be dependent on UE AS release.
- ERI: you would anyway need a Rel-13 UE, and have Iu imapcts
- NN: we have major concerns on impacting radio interface. Also, CN impacts may or may not happen, since the functionality would be optional.
- HW: we don't think this sync error is a major issue, infact we propose not to add any mechanism to handle it.
- ERI: depending on RLC settings, the recovery delay can be long. This issue would be quite significant for MTC devices that are in bad coverage (higher # of re-tx).
- HW: you can extend the Tptw.
- ERI: yes, but there is big impact on UE battery

=> no conclusion at this meeting. Email discussion

=> EMAIL DISCUSSION (until next meeting)

✉ **[UMTS/Power saving] – Sync error - Ericsson**

- Intended Outcome: discuss pros/cons and conclude on the sync error issue
- Deadline: Nov. 4th

R2-154496 Introduction of eDRX timestamp Ericsson draftCR 25.331 13.0.0 B Rel-13 UTRA_SDATA_POWSAV-Core
wrong spec number & WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"
=> Not treated

Not treated

R2-154585 Stage3 impacts for connected eDRX up to 20 sec Huawei, HiSilicon discussion
R2-154588 Mobility considerations for connected eDRX up to 20s Huawei, HiSilicon discussion
R2-154589 [Draft] LS on measurements requirements on eDRX in connected Huawei, HiSilicon LS out
Above 3 Tdocs not treated

11.2.2 Other

R2-154485 Return into I-eDRX Ericsson discussion
=> Noted

R2-154486 LS on enabling return into extended DRX in Idle mode for UMTS Ericsson LS out
- HW: we think 1 bit is enough to be signalled from CN to RAN
- NN: can the CN configure the UE with both PSM and eDRX?
- ERI: it is a possibility. Having 1 bit would be problematic if the UE is configured for both. Also, the RNC may need to know if it's for PSM or eDRX, so that it can handle different configurations.
- HW: if UE is configured with either one of the two, does the RNC need to know which one? We think RNC doesn't need to distinguish among the two.
- NN: we are ok with two bits.

=> we'll soften the LS wording (content and action), along the lins of "RAN2 opinion is that an additional bit may be beneficial…", and let RAN3 discuss/conclude on this.
=> The LS is revised in R2-154942

R2-154942 LS on enabling return into extended DRX in Idle mode for UMTS Ericsson LS out
from: RAN2 to: RAN3 Rel-13 UTRA_SDATA_POWSAV-Core
=> update LS with the sentence "RAN2 opinion is that an additional bit may be beneficial"
=> LS is revised in R2-154944

R2-154944 LS on enabling return into extended DRX in Idle mode for UMTS Ericsson LS out
from: RAN2 to: RAN3 Rel-13 UTRA_SDATA_POWSAV-Core
✓ => The LS is approved in R2-154945

11.3 WI: Support of EVS over UTRAN CS

(EVSoCS_UTRAN-Core; leading WG: RAN2, started: Dec. 14, target: Dec 15, WID: RP-151282)

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Time budget: 1 TU

R2-154937 Minutes of joint RAN1/RAN2 EVS session Ericsson Rel-13EVSoCS_UTRAN-Core
=> Noted

The following documents were treated in the joint RAN1 and RAN2 session (R2-154937)

R2-154093 Considerations on EVS CS RABs and configuration parameters Qualcomm Incorporated discussion

R2-154094 Examples of EVS CS RABs Qualcomm Incorporated discussion

R2-154596 draft pCR to 25.993 V12.0.0 on introduction of new RAB combination for EVS over CS Huawei, HiSilicon discussion

R2-154597 Discussion on reusing TFC control for EVS over CS Huawei, HiSilicon discussion

11.4 WI: Network-Assisted Interference Cancellation and Suppression for UMTS

(UTRA_NAICS-Core, Leading WG: RAN1, started: Sep. 15, target: Dec. 2015, SID: RP-151577)

Time budget: 2 TU

Discussion still ongoing in RAN1 and no decision yet on final solution.

R2-154235 Discussion on RAN2 impact for NAICS Huawei, HiSilicon discussion
=> Noted.

R2-154277 Considerations on solutions for enhanced offloading in NAICS Nokia Networks discussion
revised to R2-154884

R2-154884 Considerations on solutions for enhanced offloading in NAICS Nokia Networks discussion
=> Noted.

R2-154684 Offloading for NAICS Ericsson LM discussion
QC: Fine with Proposal 1.
QC: On proposal 2, there is an alternative to use the legacy mechanism, where NW can change CIO via Measurement Control message after the Offload.
Ericsson: With legacy mechanism there will be extra signalling compared to applying the offset to suppress the 1D on second best cell. There may also be an impact on accuracy.
NN: We share the same opinion as QC.
=> Noted

11.5 WI: Multiflow Enhancements for UTRA

WI closed

(HSDPA_MFTX_enh-Core, leading WG: RAN2, started March 15, target:Sep. 15 , WID: RP-150288)

R2-154188 Correction on DC-HSUPA and 3F-4C Huawei, HiSilicon draftCR 25.319 12.3.0 F Rel-13 HSDPA_MFTX_enh-Core
- Nokia Net thinks that the CR is not needed as the “two adjacent frequencies” refer to the DC HUSPA operation (two adjacent UL and DL frequencies are needed) and it is not related to multi flow.

=> The CR is not agreed

11.6 WI: HSPA Dual-Band UL carrier aggregation

(HSUPA_DB_MC-Core; leading WG: RAN4; REL-13; started: Dec. 14; target: Dec. 15; WID: RP-142237)

Time budget: 0.5 TU

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Incoming LSs

R2-154013 LS to RAN1, RAN2 and RAN3 on HSPA DB UL CA agreements (R4-155430; contact: Qualcomm) RAN4 LS in to: RAN2
=> Noted

R2-154095 Signalling changes due to the introduction of DB-DC-HSUPA Qualcomm Incorporated discussion

- Nokia Net thinks that we may need to update stage 2, 25.319 and the 25.327 doesn't need to be yet updated.

Proposal 1: There is no need to create a separate UE capability for DB-DC-HSUPA. Instead, the UE reports DC-HSUPA capability along with the supported DB-DC-HSUPA band combinations.

- Qualcomm confirms that only power class 3 is supported at this point.

Proposal 2: in 25.331, use Option 2 (described above) to capture UE band capability of DB-DC-HSUPA.

- Nokia net has a preference for option 1 and would like to avoid introducing a new table. With option 1 we don't have to anything in RAN4.

Proposal 4: in 25.331, introduce a new IE for enhanced UPH reporting configuration of secondary uplink cell.

- Nokia Net thinks that we discussed this in Rel-12 and not sure why we decided not to do configure separate
- Qualcomm would like everyone to think more if this can be used for TTI switching.

=> Noted

Agreements:

- There is no need to create a separate UE capability for DB-DC-HSUPA. Instead, the UE reports DC-HSUPA capability along with the supported DB-DC-HSUPA band combinations.
- How to signal the band combination capabilities is FFS. For now we will assume option 1
- Event 6x reporting will follows the legacy rule of DC-HSUPA, for power class 3
- FFS how we handled enhanced UPH reporting configuration of secondary uplink cell

R2-154096 Considerations on DB-DC-HSUPA power and data allocation rules Qualcomm Incorporated discussion

Proposal 1: Prioritize power allocation to the carrier with better UL (i.e. carrier with lower DPCCH power)

- Nokia Net suggests that with network implementation we can already achieve what the proposal is proposing. Ericsson has a similar understanding, the network can compensate the grants.
- Huawei understands the logic but also agrees with Ericsson and Nokia Net and as a network would like to have more control on the UE side power allocation.

Proposal 2: Perform the E-TFC selection on the carrier with better UL first (i.e. carrier with lower DPCCH power)

- Nokia Net is fine with both proposals. Nokia Net sees a benefit with this proposal for the non-full buffer cases. When there is a marginal amount of data the UE may potentially unnecessarily spend more power on the higher band.
- Ericsson thinks that if we don't change the power splitting mechanisms they have a preference to keep the existing ways.
- Ericsson wonders if the network can adjust the grants properly to compensate for that. Nokia Net thinks that this would be possible if the network can control the grants perfectly dynamically to the amount of data, but we can't do this today and the network usually overshoots.
- Ericsson thinks that this may cause balancing issues and make it harder for the network to control.

Proposal 3: Transmit the non-scheduled flow on the low band carrier (most likely to have better UL)

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- Nokia Net is also fine with this one

Non-schedule flow can be transmitted on any carrier?
- Nokia Net, Huawei are fine. Ericsson thinks that non-scheduled flow are used for SRBs and this may cause problems if we want to deactivate a second carrier. Nokia Net wonders if a network will configure a higher band as a secondary carrier. Ericsson thinks this is possible but if we today already schedule the primary on the lower band we can already do this.
  Ericsson also thinks that we would put speech on the primary in the lower band.

=> Noted

R2-154097 Other considerations on DB-DC-HSUPAQualcomm Incorporated discussion
Late
=> withdrawn

11.7 WI: Application specific Congestion control

(ACDC-RAN-Core; leading WG: RAN2; REL-13; started: Mar. 15; target: Dec. 15; WID: RP-150512)

Time budget: 0.25 TU

UMTS specific aspects of ACDC

Chair: The following agreements reached in main session are also applicable to UMTS, with some updates.

Agreements:
2: Must be possible for ACDC category to not be barred (details left to stage 3 CR - e.g. whether add probability 1.0 or by absent optional IE)
5: For roaming UEs, if ACDC is applied, ACDC control parameters are the same (equal) as for home users.
6: For RAN sharing ACDC control parameters can be provided individually per PLMN. Parameters could also be provided commonly.
7: If parameters are provided individually, whether the UE of a PLMN sharing the RAN shall apply ACDC is indicated by the presence or absence of the PLMN specific ACDC control parameters.

Agreements:
1: When access to the cell is barred due to ACDC, RRC informs NAS that the access barring is applicable due to ACDC.
4: If RRC receives a connection request from NAS while barring is ACDC applicable then it will act on that request according to existing specification. (Thus left to NAS to decide in which situations a request can be made).
6 For the ACDC category configured in the UE but with no corresponding ACDC barring information broadcast at a cell (i.e. unmatched ACDC category), UE RRC performs the ACDC barring check by using ACDC barring parameters corresponding to the lowest ACDC category in system information.

⇨ Chair: We should try to give comments to the LS, on UMTS specific part.

R2-154237 Discussion on open issues for ACDC in UMTS Huawei, HiSilicon discussion

- Intel: We agree proposals on DSAC.
- E///: if a UE is configured with ACDC, if not barred, UE should check legacy access control mechanism.
- Intel: network should not have conflicted access control configurations.
- HW: we think network should configure properly.
- HW: our solution reflect the SA1 requirements on prioritization.
- E///: for P1, maybe we should ask CT1 about if override should be followed or not. E/// think for blocking, the logic should be “AND”, the starting point is, if ACDC is not barred, the legacy control should be cheked.

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- HW: we don't have a strong position, but for example, EAB, it is for MTC device, the logic is different.

=> Noted.

R2-154536 ACDC System Information Broadcast implementation in UTRAN Ericsson LM discussion

- Intel: for P1, it is part of our working assumption; for P2, we are not forced to follow LTE approach, how SA1 requirement (on prioritization) is fulfilled if we just use 0 or 1 (barred or not barred); for ACB like mechanism in LTE, it could meet SA1 requirement;
- E///: we could use what we have in UMTS today, i.e. bitmap mechanism, but we need to see if more work is to be done to fulfil SA1 requirement.
- HW: in our paper, we have detailed analysis on ACB like mechanism.
- Intel: barring factor/time in ACB like approach could provide more flexibility.
- E///: HW's proposal could fulfil SA1 requirement, but it requires more negative impacts on legacy UEs.
- E///: we could have compromised approach,
- HW: we could first decide if we use LTE ACB or UMTS EAB/ACB like, then we decide on value tag or barring expiration timer. HW is neutral on the first issue.
- Intel: we prefer LTE ACB like approach, in order to make progress, we are also ok with the ACDC bit map approach, i.e. single bit for each ACDC category.
- QC: did LTE session discuss bitmap approach also? HW confirms they did.
- Intel: for expiration timer, when the timer is expired, the UE will re-acquire the SI when there is an access request.
- QC: we have a slight preference to expiration timer. E/// also prefers. HW is OK. Intel is neutral.

=> Noted.

Working Assumption:

=> For the operating rule when ACDC and legacy mechanisms, i.e. DSAC, ACB list and EAB, are configured together, we leave them FFS for the moment.

Agreements:

=> One bit is used to indicate that all the UEs with one certain ACDC category are barred. Otherwise, ACB bitmap, based on AC (access class list), will be used to control access of that ACDC category for some UEs.

=> We go for the Rel-12 expiration timer mechanism.

Not treated:

R2-154238 CR to 25.304 on ACDC in UMTS Huawei, HiSilicon draftCR 25.304 12.6.0 B Rel-13 ACDC-RAN-Core

R2-154239 CR to 25.331 on ACDC in UMTS Huawei, HiSilicon draftCR 25.331 13.0.0 B Rel-13 ACDC-RAN-Core

wrong spec version number used in CR cover; it should be 13.0.0

R2-154502 Supporting ACDC access control in UTRAN Ericsson LM draftCR 25.304 12.6.0 B Rel-13 ACDC-RAN-Core

R2-154522 Introduce a new SIB using value tag for supporting ACDC Ericsson LM draftCR 25.331 13.0.0 B Rel-13 ACDC-RAN-Core

wrong spec version number used in CR cover: it should be 13.0.0

R2-154537 Introduce a new SIB using Expiration Timer for supporting ACDC Ericsson LM draftCR 25.331 13.0.0 B Rel-13 ACDC-RAN-Core

wrong spec ver number used in CR cover; it should be 13.0.0

=> Chair: the above CRs are not treated, will go for email discussion to target base line CRs, taking reached agreements into account. For FFS part, could try to have initial changes with [FFS].

✉ **[UMTS/ACDC] Draft base line CRs for 25.331&25.304 till next meeting (ERICSSON)**

✉ **=> Intended outcome: Draft base line CRs for 25.331&25.304**

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11.8 WI: Indoor Positioning enhancements for UTRA and LTE

(UTRA_LTE_iPos_enh-Core; leading WG: RAN2; REL-13; started: Sept. 15; target: Dec. 15; WID: RP-151624)

Time budget: 1 TU

UMTS specific aspects of indoor positioning

R2-154373 WLAN/Bluetooth and Barometric Pressure positioning Apple Europe Limited draftCR 25.305 12.1.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover; it should be "UTRA_LTE_iPos_enh-Core"
=> The CR is merged into R2-154959

R2-154733 RAT-Independent positioning enhancements NextNav, Broadcom draftCR 25.305 12.1.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong WI code used in CR cover; it should be "UTRA_LTE_iPos_enh-Core"
=> The CR is revised into R2-154959

R2-154959 RAT-Independent positioning enhancements NextNav, Broadcom draftCR 25.305 12.1.0 B Rel-13 UTRA_LTE_iPos_enh-Core
- Chair: the updates reflected the outcome of offline so far?
- NextNav: yes.
- QC: on PRSTBS, assistance data from network are needed.
- NextNav: in last plenary, it was agreed that assistance data are not prioritized.
- QC: we have to do state 2 &3 CRs together.
- Apple: we need a place holder in stage 2 for assistance data.
- NextNav: we could try to have a baseline stage 2 endorsed/running CR
- HW: we need to have a whole set of stage 2 and stage 3 CRs, in line with each other.
- TP: table 15.1 need to be updated.
- NN: for both TDD & FDD?
- NextNav: not discussed yet. We once asked HW if any Chinese operators with TDD deployment are interested.

=> We need to check this.
- Apple: for FDD, this should be supported.
- Spirent: the text in 4.3.5 to be updated; in 5.2.4 method -> method(s); maybe other sensors could be used.
- Nextnav: we did look some other sensors in the SI phase, but in the WID, it is clearly guided, but for R13, we focus on barometric.
- Apple: the autonomous method just tells the network the result which is sensor independent, but this should be discussed based on contribution.
- E///: what is the use case that which sensor is aware by the network?
- NextNav: FCC required that which sensor is used, for statistics.
- E///: what about the agreements on the couple of WiFi and BL?
- Intel: in LTE, there is procedure for combined WiFi&BL, but the procedure could also be applied to either.
- E///: in 15, first paragraph, and -> and/or

=> The CR is the baseline CR. We will see a revision in next meeting.
=> The CR is postponed

R2-154734 RAT-Independent positioning enhancements NextNav draftCR 25.331 13.0.0 B Rel-13 UTRA_LTE_iPos_enh-Core
wrong spec number & WI code used in CR cover; it should be "UTRA_LTE_iPos_enh-Core"
=> The CR is revised into R2-154960

R2-154960 RAT-Independent positioning enhancements NextNav draftCR 25.331 13.0.0 B Rel-13 UTRA_LTE_iPos_enh-Core
- E///: what the usefulness of “None” in capability table in 10.3.3.45.
- NextNav: we agree, it is no use.
- E///: in10.3.7.99, 10.3.9b should not be referred. In 10.3.7.101, definition needed for new 7X events, wrong reference, OP->MP
- E///: where are those values coming from?
- QC: timestamp?
- NextNav: agree with QC that timestamp should be equivalent with LPP (to be added)

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- Chair, QC: was MDT discussed?
- E///: no, it is not part of the WID.
- NN: please use latest version, for example, in 10.3.7.109.
- E///: should not be sent on RACH; the last two introduced table should be 10…x.y, there are too much texts in Semantics description, suggest having procedure text. “filed”->”IE”
- HW: do we need some RAN4 measurement related spec updates?
- .E///: in 10.3.3.45, do we need a separate table for WLAN/BT support bit meaning?
- NN: coversheet, RAN should be ticked, CN should not be ticked.

=> The CR is postponed.

✉ **[UMTS/Indoor positioning] – Running Stage 2 and Stage 3 CRs - NexNav**
- Capture the agreements in stage 2 and review 25.331 CR
- Deadline: Nov. 4th

11.9 WI: Downlink TPC enhancements for UMTS

(UTRA_EDL_TPC-Core; leading WG: RAN1; REL-13; started: June. 15; target: Dec. 15; WID: RP-151044)

Time budget: 0.5 TU

R2-154897 LS on RAN1 Downlink TPC Enhancements agreements (R1-154800; contact: Huawei)
=> Noted.

R2-154234 Discussion on RAN2 impact for Downlink TPC enhancements Huawei, HiSilicon discussion
=> Noted

Proposal 1: It is proposed RAN2 to introduce a new indication of TPC algorithm 3, and it can be in IE "Uplink DPCH power control info".

QC, NN fine with proposal.

Proposal 2: It is proposed RAN2 to agree that TPC algorithm 3 can be indicated in CELL_FACH state and in pre-defined configuration.

QC: In legacy we can configure TPC in CELL_FACH?

NN: Algorithm 3 will be optional, it is not straight forward. Node B will not have context info in CELL_FACH, so has no way of knowing if Algorithm 3 will be used or not.

QC share the same concern.

Agreement:

- Algorithm 3 is applicable to CELL_DCH only.
- We will have a capability bit to allow UE indicate support of Algorithm 3.
- RAN2 to introduce a new indication of TPC algorithm 3 in IE "Uplink DPCH power control info".

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11.10 WI: Dual Carrier HSUPA Enhancements for UTRAN CS

(DC_HSUPA_CS-Core; leading WG: RAN2; REL-13; started: Sept. 15; target: Dec. 15; WID: RP-151607)

Time budget: 1 TU

R2-154280 Workplan for dual carrier HSUPA enhancements for UTRAN CS Nokia Networks discussion
=> Noted

R2-154281 Initial considerations on introduction of the dual carrier HSUPA enhancements for UTRAN CS Nokia Networks discussion
- Huawei wonders why we have F-DPCH and DPCH in different carriers as today we only are required to receive on type. Nokia Net indicates that to allow 2xSF4 in the secondary carrier we have to do F-DPCH in the secondary carrier.
- Ericsson wonders if we can have F-DPCH in the primary carrier with CS. Nokia Net clarifies that there is layer 1 restrictions and you need to have DPCH with DPDCH.
- Ericsson wonders if the feature would also be applicable to DB HSUPA. Nokia Net thinks yes and everything remains the same.

=> Noted

Agreements:
- Allow combination of dual carrier HSUPA and DPDCH by re-using "2xSF2" code configuration on the primary frequency and the full "2xSF4 + 2xSF2" code configuration on the secondary frequency.
- When configured together with dual carrier HSUPA, the DPDCH is present only on the primary frequency (similar to existing MC-HSDPA operation).
- For the power control, DPCH is configured on the downlink frequency associated with the primary uplink while F-DPCH is used on the downlink frequency associated with the the secondary uplink
- All restrictions on features that can (or cannot) be combined with dual carrier HSUPA operation also apply to a case when dual carrier HSUPA is configured together with DPDCH
- All agreements apply equally to dual band HSUPA

R2-154282 Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.319 Nokia Networks draftCR 25.319 12.3.0 B Rel-13 DC_HSUPA_CS-Core
wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"
- Huawei wonders if we will have RAN1 CRs covering the DPCH and F-DPCH timing aspects.
- Chair wonders about the UL DPDCH timing. Nokia Networks will check.

=> The CR is postponed

R2-154283 Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.302 Nokia Networks draftCR 25.302 13.0.0 B Rel-13 DC_HSUPA_CS-Core
wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"
Huawei indicates that there will be a clash with R2-154098. Nokia Net needs to check how to handle the two CRs.
=> The CR is postponed

R2-154284 Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.306 Nokia Networks draftCR 25.306 12.6.0 B Rel-13 DC_HSUPA_CS-Core
wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"
=> On the Primary Uplink frequency is not needed
=> Change the title of the CRs "Introduction of Dual Carrier HSUPA enhancements for UTRAN CS"
=> The CR is postponed

R2-154285 Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.331 Nokia Networks draftCR 25.331 13.0.0 B Rel-13 DC_HSUPA_CS-Core
wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"

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- Nokia Net thinks that in section 8.5.58 we need to specify that the condition “the IE "Number of DPDCH" in the IE "Uplink DPCH info" is set to 0” is only applicable when the UE doesn’t support CS + DC HUSPA.

=> add that the UE shall signal an "E-DCH physical layer category" of 8 and 9
=> The CR is postponed

R2-154286 [draft] LS on RAN2 agreements for dual carrier HSUPA enhancements for UTRAN CS Nokia Networks LS out Rel-13 DC_HSUPA_CS-Core
=> add that “ The above agreements also apply to Dual Band HSUPA”
=> The LS is approved in R2-154936

11.11 UMTS TEI13 enhancements

Small Technical Enhancements affecting UMTS Rel-13 that do not belong to any Rel-13 WI.

Note: A TEI enhancement proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

R2-154232 Considerations on DL RLC PDU size configuration for D2F state transition Huawei, HiSilicon discussion
=> No support for the proposal
=> Noted

R2-154233 Correction on DL RLC PDU size configuration for D2F state transition Huawei, HiSilicon draftCR 25.331 13.0.0 F Rel-13 TEI13
wrong spec version number used in CR cover; it should be 13.0.0
=> Not treated

R2-154487 Access Groups based access control enhancements Ericsson discussion
=> We will come back in the next meeting with a full package CRs
=> Noted

Not treated:

R2-154497 Access Groups based access control enhancements Ericsson draftCR 25.300 12.4.0 B Rel-13 TEI13, EDCH_enh-Core

R2-154498 Access Groups based access control enhancements Ericsson draftCR 25.306 12.6.0 B Rel-13 TEI13, EDCH_enh-Core

R2-154499 Access Groups based access control enhancements Ericsson draftCR 25.331 13.0.0 B Rel-13 TEI13, EDCH_enh-Core
wrong spec ver number used in CR cover; it should be 13.0.0
Above 3 Tdocs not treated

R2-154609 Planning of the Rel-13 RRC message and ASN.1 review for UTRA Ericsson (Rapporteur) discussion
=> The ASN.1 review is planned assuming a target freeze date of March 2016=> In that case the ASN.1 review will be held during RAN2#93. At least two days will be reserved and maybe a Friday session will be required.
=> Noted

R2-154814 LTE CA capability inquiry Qualcomm Inc draftCR
late
- Ericsson wonders if this CR solves the problem we were discussing in LTE in the joint session.
- Ericsson wonders what happens if the message doesn’t fit. Nokia Net clarifies that the capabilities always fit but the message size becomes too big. Qualcomm indicates that they see a very large message size and the time to send this message affects the call setup times.
- Ericsson thinks that we should consider what information is important for the network and wonders why we restricted to CA only now.
- ALU wonders what release we can start from. Qualcomm thinks that we can discuss the release and rel-9 and 10 can be considered.
- Chair wonders if this solutions has any impacts to LTE. Qualcomm thinks that there will be some impacts to LTE but there is no solution with no impacts to LTE.
- ALU indicates that they see the problem and that it takes a long time to transmit the message.

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- Ericsson would like to understand how to make these changes early implementable. Qualcomm thinks this is possible if we make the changes from Rel-x. Ericsson wonders if the network can ask for all the capabilities.
- Ericsson thinks that a partial capability reporting may not add anything when compared to signalling nothing at all and explains that on the LTE side you still have to request all the capabilities. Nokia Net thinks that at least the network would have the basic LTE capabilities and only the CA combinations would be omitted. ALU thinks that this can potentially resolve the category 0 problem.
- Huawei thinks that if the network knows that the UE supports LTE it can do redirection or if it wants to perform a handover the network can request the full capabilities in RRC connection request. Qualcomm indicates that the network can figure out that the UE is LTE capable based on the reported UE measurement capabilities.
- Chair wonders if the LTE side needs to know whether the capabilities reported are partial. Nokia Net thinks that a year ago LTE introduced a feature that allows the network to detect that the UE reported a partial capability.

=> RAN2 acknowledges that the issue of large UE capability size for legacy RACH/FACH exists

Possible solutions:

1. UE reports partial capabilities based on network request (QC). FFS if LTE needs to be made aware that a partial capability was reported.

2. UE reports no capability report (the network doesn't request the capability). The network has the option to do:
    a. Redirection
    b. Request full capabilities after the UE enters CELL_DCH

3. UE reports no capability report (the network doesn't request the capability). An empty container is sent in handover preparation to E-UTRAN and a handover to LTE assuming basic LTE capabilities is performed.

After comeback:

- After comeback companies do not have the same understanding on the UE behaviour with the reduced capability CRs approved one year ago. Another meeting is required to understand how the current system behaves and whether there is a need to do anything.
- Qualcomm points out that the mechanisms can be clarified in the UMTS room and we should first clarify what is the intended behaviour from the UMTS side.
- Qualcomm thinks that regardless of how it works we need to find a solution for current UEs.

=> The CR is postponed

12 Outgoing LSs and email discussions from UTRA session

12.1 Agreed outgoing LSs from UTRA session

R2-154936 LS on RAN2 agreements for dual carrier HSUPA enhancements for UTRAN CS RAN2 LS out from RAN2 to: RAN1, RAN4, RAN3 Rel-13 DC_HSUPA_CS

R2-154943 LS on extended DRX in Idle mode in UMTS RAN2 LS out from: RAN2 to: SA2, CT1, RAN4 cc:RAN3 Rel-13 UTRA_SDATA_POWSAV-Core

R2-154945 LS on enabling return into extended DRX in Idle mode for UMTS RAN2 LS out from: RAN2 to: RAN3 Rel-13 UTRA_SDATA_POWSAV-Core

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R2-154955 LS to RAN3 on DL enhacements RAN2 LS out
rom: RAN2 to: RAN3Rel-13 UTRA_EDL_L23-Core

12.2 Email discussions from UTRA

✉ **[UMTS/Retrievable configuration] Running CRs (Huawei)**
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331 and 25.300
- Review running CR, provide comments and capture all open issues for input in the next meeting
- Deadline Nov. 5th

✉ **[UMTS/Seamless URA_PCH] Running CRs – Huawei**
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331, 25.300, 25.301
- Review running CR, provide comments and capture all open issues for input in the next meeting
- Deadline Nov. 5th

✉ **[UMTS/Improved synchronized RRC procedures] Running CRs – Huawei**
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331, 25.300, 25.321.
- Review running CR, provide comments and capture all open issues for input in the next meeting
- Deadline Nov. 5th

✉ **[UMTS/eDRX] Running stage 3 CRs - Ericsson**
- Intended Outcome: review stage-3 running CRs, to be provided as input to next RAN2 - Deadline: Nov. 4th

✉ **[UMTS/Power saving] – Sync error - Ericsson**
- Intended Outcome: discuss pros/cons and conclude on the sync error issue
- Deadline: Nov. 4th

✉ **[UMTS/ACDC] Draft base line CRs for 25.331&25.304 till next meeting (ERICSSON)**
=> Intended outcome: Draft base line CRs for 25.331&25.304

✉ **[UMTS/Indoor positioning] – Running Stage 2 and Stage 3 CRs - NexNav**
- Capture the agreements in stage 2 and review 25.331 CR
- Deadline: Nov. 4th

13 Comebacks

This agenda item will be used during the meeting. No documents are supposed to be submitted by delegates.

13.1 LTE breakout sessions

13.1.1 Report from the Legacy LTE User Plane session

R2-154890 Report from Legacy LTE UP Session, Session Chair (LGE)
CBF: Report from UP Session, Session Chair
=> Approved

LTE UP
R2-154902 Introduction of enhanced CA in PDCP LG Electronics Inc. draftCR 36.323 12.4.0 B
Rel-13 LTE_CA_enh_b5C-Core
=> Running CR is endorsed

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13.1.2 Report from LTE Break-Out session

R2-154891 Report from LTE Break-Out Session, Vice-Chair (InterDigital)
CBF: Report from LTE Break-Out Session, Vice-Chair (InterDigital)
=> Approved

ProSe Rel-13

R2-154917 LS to SA2 on RAN2 agreements related to ProSe LG LS out from: RAN2 to: SA2, CT1, RAN3? Rel-13 LTE_eD2D_Prox-Core
=> CT1 moved to To field
=> Approved in R2-154998

R2-154951 Draft LS on inter-frequency and inter-PLMN discovery Qualcom LS out from RAN2: to: RAN1, RAN3, RAN4 Rel-13 LTE_eD2D_Prox-
- Qualcomm indicate that an additional comment needs to be taken into account.
- Revision in R2-154990

R2-154990 Draft LS on inter-frequency and inter-PLMN discovery Qualcom LS out
✓ => Approved in R2-154994

R2-154952 Draft LS on out-of-coverage discovery LGLS out from: RAN2 to: SA2 and CT1 Rel-13 LTE_eD2D_Prox-Core
=> CT1 moved to To field
✓ => Approved in R2-154999

R2-154916 LS to SA3 on on LCID and the protection of one-to-one traffic Ericsson from: RAN2 to: SA3
=> Next meeting dates to be fixed
✓ => Approved in R2-154933

E-DRX

R2-154919 Draft LS on eDRX agreements Ericsson LS out from: RAN2 to: SA2 and RAN3 Rel-13 LTE_extDRX-Core
- Qualcomm ask why SA1 is included. Ericsson think SA1 own the requirements for ETWS.
- Qualcomm ask why the MTC sentence is included. Intel think is was discussed that the size limit has an impact. Nokia agree with Qualcomm, it is a different issue if LC-MTC can not support ETWS, etc. Huawei agree.
- Intel think the comment about MTC is true and ask if we should send a separate LS to tell SA1. DCM suggest to clarify that eDRX and MTC independent.

=> change " monitor a number of legacy paging ..." to " monitor one or more legacy paging ..."

=> Remove MTC comments from this LS. ETWS, etc problem is only addressed to SA1.
=> Revision of this LS in R2-154991. Approved

=> New draft LS on MTC in R2-154992. Ericsson.

=> New draft LS to RAN4 to inform them of the new DRX values in R2-154993. Qualcomm

R2-154993 LS on eDRX cycles Qualcomm RAN4 LS out
✓ => Approved in R2-155000

R2-154992 DRAFT LS on warning systems for feMTC SA1 Ericsson
✓ => Approved in R2-155001

V2X

R2-154950 DRAFT LS on V2X message characteristics Ericsson LS out LS answer to LSin R2-154008 Rel-13 FS_LTE_V2X
=> Para starting " The details of RAN1's working assumption are outside RAN2's work scope and competence. However, existing ". Text from 'However' onwards deleted.
=> ITS deleted from Q2
=> Update paragraph to say ". RAN2 will continue to analyze L2 message overhead for V2X message size and will inform RAN1 accordingly. " and remove remaining text of sentence.

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=> Remove the (e.g ...) from Q1
=> Approved in R2-155003

Latency Reduction

no comebacks

13.1.3 Report from LTE Break-Out session

R2-154892 Report from LTE Break-Out Session, Vice-Chair (CMCC)
CBF: Report from LTE Break-Out Session, Vice-Chair (CMCC)
- ZTE state that the outcome of MCLD discussion is contained in R2-154927
- Ericsson think the CRs in stage 3 CRs are not endorsed running CRs
=> Agreed that the stage 3 CRs for SC-PTM are not yet endorsed running CRs
- ZTE states that we also need a new LCID value for SC-MCCH. New LCID for SC-MTCH is also needed. Nokia think the report captures the agreements correctly and we do not need a new LCID for SC-MTCH. ZTE explain that it is not a reserved LCID but any value can be selected.
- Huawei comment that 36.314 will need its scope to be extended to include a UE measurement.
=> The UE measurements will be included in 36.314
- DCM think it will be good to look at the ASN.1 impact of agreement R2-154776
=> Keep baseline principles of the agreement but look in more detail how the agreements are implemented in ASN.1. DCM to prepare draft stage 3 CR for submission to next meeting.
=> With additional agreements above the report is approved.

MCLD

R2-154922 Draft LS to RAN4/1 on RAN2 agreemtns on Signalling support for SINR measurements (Ericsson) LS out
=> Approved in R2-155004

R2-154921 Extension of Frequency Priorities Nokia Networks draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
=> In principle agreed.

R2-154923 Extension of Frequency Priorities Nokia Networks draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
- Content is the same as R2-154704
=> In principle agreed.

R2-154927 A merged CRS and OSS solution for Idle mode load distribution Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Samsung, LG Electronics, Intel Corporation, Sony, ZTE, Mediatek, ITRI,
=> Agree the described solution as the merged Continous Re-distribution Scheme (CRS) and One Shot Scheme (OSS) for Idle mode distribution
=> Noted

✉ **Email discussion on draft CR to 36.331. Intended outcome is endorsed CR to next meeting (ZTE).**

MDT

R2-154924 Draft LS to RAN3 on New MDT measurement introduced by feMDT (Huawei) LS out
- revised in R2-154932
R2-154932 Draft LS to RAN3 on New MDT measurement introduced by feMDT (Huawei) LS out
- Approved in R2-154934

13.1.4 Report from NB-IOT session

R2-154893 Report from LTE Break-Out Session, Session Chair (MediaTek)
CBF: Report from LTE Break-Out Session, Session Chair (MediaTek)
=> Approved

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13.2 UMTS breakout session

This section is just used with a temporary list of comebacks during the meeting and all comebacks treated during the meeting.

13.3 Main session

This section is just used with a temporary list of comebacks during the meeting and all comebacks treated during the meeting.

13.4 Email Discussions from main session

For plans for email discussions after RAN2 #91bis see Annex F.

14 Outgoing LS from LTE and Joint

Draft LSs should be submitted to their corresponding agenda item if there is one. If there is no appropriate agenda item, draft LSs may be submitted to this agenda item.

Draft outgoing LSs (not related to any Agenda Item above)

None

Approved LSs

For Approved outgoing LSs in RAN2 #91bis see Annex D.

15 Any other business

Future meeting dates

Click here for the overview of all RAN2 and RAN meeting dates.

MEETING	DATES	LOCATION	HOST	CO-LOCATION
RAN2 #92	16 Nov. – 20 Nov. 2015	Anahaim, USA		RAN 1/2/3/4/5
RAN #70	7 Dec. – 10 Dec. 2015	Sitges, Spain	EF3	
RAN2 NB-IoT	19 Jan. - 21 Jan. 2016	tbd, EU	GSMA	RAN1/2/3/4
RAN2 #93	15 Feb. - 19 Feb. 2016	Malta	EF3	RAN1/2/3/4/5
RAN #71	07 Mar. - 10. Mar. 2016	Gotebory, Sweden	EF3	
RAN2 #93bis	11 Apr. - 15. Apr. 2016	Dubrovnik, Croatia	EF3	
RAN2 #94	23 May - 27 May. 2016	tbd, China	CMCC	RAN1/2/3/4/5
RAN #72	13 Jun. -16 Jun. 2016.	tbd, South Korea	TTA	
RAN2 #95	22 Aug. - 26 Aug. 2016	Gotebory, Sweden	EF3	
RAN #73	19 Sep. - 22 Sep. 2016	tbd, USA	NAF3	

EF3: European Friends of 3GPP
NAF3: North American Friends of 3GPP
JF3: Japanese Friends of 3GPP

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16 Closing of the meeting (17:00)

The TSG RAN WG2 chairman Richard Burbidge (Intel Corporation) thanked the delegates for participating and session chairs for contributing to RAN WG2 meeting #91bis. He also thanked the European Friends of 3GPP (EF3) for hosting this meeting.

TSG RAN WG2 chairman Richard Burbidge (Intel Corporation) closed the meeting on Friday 9.10.2015 around 17:00.

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Annex A:
List of participants

The list of participants of this RAN WG2 meeting #91bis is will be attached to this report.

Total number of participants: 204 (registered before the meeting: 265)

Annex B:
List of Tdocs

The list of Tdocs of this RAN WG2 meeting #91bis is attached to this report.

Total number of Tdocs: 1007 of which 37 Tdocs are not available, i.e. 970 Tdocs are available.

Annex C:
Incoming liaison statements for TSG RAN WG2 #91bis

RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-154004	Reply LS to S2-152699 = R2-153034 on ProSe coarse proximity estimation based on path loss (R1-154871; contact: Intel)	RAN1	R1-154871	noted		
R2-154005	LS on eD2D ProSe Per Packet Priority (R1-154876; contact: Qualcomm)	RAN1	R1-154876	noted		
R2-154006	LS on RAN1 agreements at RAN1#82 (R1-155009; contact: Qualcomm)	RAN1	R1-155009	noted		
R2-154007	LS on RAN1 agreements on CA Enhancement Beyond 5 Carriers (R1-155011; contact: Nokia Networks)	RAN1	R1-155011	noted		
R2-154008	LS on traffic model assumption in LTE-based V2X (R1-155014; contact: LGE)	RAN1	R1-155014	noted		

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RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-154009	LS on UE based timing offset reporting for DC enhancement (R4-154844; contact: NTT DOCOMO)	RAN4	R4-154844	noted	R2-154911	
R2-154010	Reply LS to R1-153553 = R2-152020 on Sidelink measurements for relay UE selection (R4-155129; contact: Qualcomm)	RAN4	R4-155129	noted		
R2-154011	LS on activation time for PUCCH SCell (R4-155134; contact: NTT DOCOMO)	RAN4	R4-155134	noted		
R2-154012	LS on Pcell specification changes (R4-155397; contact: Vodafone)	RAN4	R4-155397	noted		
R2-154013	LS to RAN1, RAN2 and RAN3 on HSPA DB UL CA agreements (R4-155430; contact: Qualcomm)	RAN4	R4-155430	noted		
R2-154014	LS on features with an FGI bit dependency from an earlier release (R5-154052; contact: Ericsson)	RAN5	R5-154052	noted	R2-155005	
R2-154015	LS on New WI on LTE-WLAN RAN Level Integration supporting legacy WLAN (RP-151623; contact: Alcatel-Lucent)	RAN	RP-151623	noted		
R2-154016	LS on MBMS_enh conclusions (S2-152964; contact: Samsung)	SA2	S2-152964	noted		
R2-154017	reply LS to R2-152915 on authentication and encryption between UE and WLAN for aggregation (S3-152085; contact: Huawei)	SA3	S3-152085	noted		
R2-154018	Response LS to C1-152403 = R2-153004 on proposed method of restricting access to IOPS cells (S3-152097; contact: General Dynamics UK Limited)	SA3	S3-152097	noted		
R2-154019	LS on QoS for EVS-VBR Codec Operation (S4-151160; contact: Qualcomm)	SA4	S4-151160	noted		
R2-154020	Reply LS R3-151316 = R2-153016 on RAN Sharing Enhancements for LTE (S5-154454; contact: Nokia Networks)	SA5	S5-154454	noted		

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RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-154021	LS on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (SP-150574; contact: Samsung)	SA	SP-150574	noted		
R2-154022	Reply LS to R2-151785 on a new measurement quantity for Multicarrier Load Distribution (R4-155130; contact: China Mobile)	RAN4	R4-155130	noted	R2-155004	
R2-154023	LS on proposed requirements for carrier Wi-Fi networks (Wifi_Alliance_LS_150818; contact: Wifi Alliance staff)	Wifi Alliance Operator Marketing Task Group		noted		
R2-154024	LS on RRC Parameters for eD2D (R1-154883; contact: Qualcomm)	RAN1	R1-154883	not treated		
R2-154025	LS on EB/FD-MIMO signalling (R1-154884; contact: Nokia Networks)	RAN1	R1-154884	noted		
R2-154026	LS on RRC parameters for LTE eMTC (R1-154885; contact: Ericsson)	RAN1	R1-154885	noted		
R2-154027	LS on Draft CRs for Improved end-to-end QoS Enhancements for MTSI (S4-AHM315; contact: Ericsson)	SA4	S4-AHM315	noted		
R2-154028	LS on LAA DL LBT Priority Classes (R1-156131; contact: Ericsson)	RAN1	R1-156131	noted		LS was received during the RAN2 #91bis meeting
R2-154029	LS on introduction of new TBS in Rel-12 (R1-156111; contact: NTT DOCOMO)	RAN1	R1-156111	noted		LS was received during the RAN2 #91bis meeting
R2-154030	LS on RAN3 agreement on DC enhancement for LTE (R3-152269; contact: Samsung)	RAN3	R3-152269	noted		LS was received during the RAN2 #91bis meeting
R2-154897	LS on RAN1 Downlink TPC Enhancements agreements (R1-154800; contact: Huawei)	RAN1	R1-154800	noted		LS was received during the RAN2 #91bis meeting
R2-154898	LS on UE-reported RSSI measurements for LAA (R1-156259; contact: Samsung)	RAN1	R1-156259	noted		LS was received during the RAN2 #91bis meeting

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postponed: LS answer was postponed to next RAN2 meeting (note: incoming LS will not be presented again at the next meeting and involved parties are requested to submit proposal for draft outgoing LS answer to next meeting).

Summary:

- In total: 29 LSs received for RAN2 #91bis (2 on UTRA, 25 on LTE, 2 on joint aspects): all of them were treated.
- 0 resubmissions from RAN2 #91
- All 29 incoming LSs were noted except 1 LS was not treated and will be resubmitted to RAN2 #92.
- 5 of the 29 incoming LSs were received during the RAN2 #91bis meeting:
- For 0 incoming LS an LS answer was postponed.

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Annex D:
Outgoing liaison statements of TSG RAN WG2 #91bis

Only final outgoing LSs are listed here.

final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-154793	LS on Indoor Positioning impacts to 29.171 (to: CT4; cc: -; contact: Nextnav)	CT4	-	Nextnav		Rel-13	UTRA_LTE_iPos_enh-Core	
R2-154900	LS to RAN1 on RAN2 agreements on MTC (to: RAN1; cc: -; contact: Ericsson)	RAN1	-	Ericsson		Rel-13	LTE_MTCe2_L1-Core	one week email discussion planned after the meeting
R2-154911	Reply LS on UE based timing offset reporting for DC enhancement Response (to: RAN1, RAN4; cc: -; contact: NTT DOCOMO)	RAN1, RAN4	-	NTT DOCOMO	R2-154009 = R4-154844	Rel-13	LTE_dualC_enh-Core	
R2-154915	LS on IPsec tunnelling mechanism for LTE-WiFi aggregation (to: SA3, SA2; cc: -; contact: Alcatel-Lucent)	SA3, SA2	-	Alcatel-Lucent		Rel-13	LTE_WLAN_radio_legacy-Core	
R2-154926	LS on SC-PTM Service Continuity (to: RAN3; cc: -; contact: Huawei)	RAN3	-	Huawei		Rel-13	LTE_SC_PTM-Core	LS was sent on 08.10.2015
R2-154928	LS on agreements for WLAN measurement reporting (to: RAN4; cc: -; contact: Ericsson)	RAN4	-	Ericsson		Rel-13	LTE_WLAN_radio-Core	
R2-154933	LS on LCID and the protection of one-to-one traffic (to: SA3; cc: -; contact: Ericsson)	SA3	-	Ericsson		Rel-13	LTE_eD2D_Prox-Core	

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final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-154934	LS on new MDT measurement introduced by feMDT (to: RAN3; cc: -; contact: Huawei)	RAN3	-	Huawei		Rel-13	LTE_eMDT2-Core	
R2-154935	LS on System Aspects for LTE-WLAN Radio Level Integration and Interworking Enhancement (to: SA2; cc: -; contact: Qualcomm)	SA2	-	Qualcomm		Rel-13	LTE_WLAN_radio-Core	Not available yet. After email discussion, a running CR will be attahced in this LS
R2-154936	LS on RAN2 agreements for dual carrier HSUPA enhancements for UTRAN CS (to: RAN1, RAN3, RAN4; cc: -; contact: Nokia Networks)	RAN1, RAN3, RAN4	-	Nokia Networks		Rel-13	DC_HSUPA_CS-Core	LS was sent on 06.10.2015
R2-154943	LS on extended DRX in Idle mode in UMTS (to: SA2, CT1, RAN4; cc: RAN3; contact: Ericsson)	SA2, CT1, RAN4	RAN3	Ericsson	R2-153032 = S2-152697	Rel-13	UTRA_SDATA_POWSAV-Core	
R2-154945	LS on enabling return into extended DRX in Idle mode for UMTS (to: RAN3; cc: -; contact: Ericsson)	RAN3	-	Ericsson		Rel-13	UTRA_SDATA_POWSAV-Core	
R2-154949	LS to RAN1 on evaluation agreements and conclusions	RAN1	-	Ericsson		Rel-13	FS_LTE_LATRED	one week email discussion planned after the meeting
R2-154955	LS to RAN3 on DL enhancements (to: RAN3; cc: -; contact: Huawei)	RAN3	-	Huawei		Rel-13	UTRA_EDL_L23-Core	
R2-154967	Reply LS on 2 UL inter-band CA protection of GNSS (to: RAN4; cc: -; contact: NTT DOCOMO)	RAN4	-	NTT DOCOMO	R2-153048 = R4-154064	Rel-11	SPIA_IDC_LTE-Core	LS was sent on 06.10.2015
R2-154991	LS on eDRX for EUTRA (to: SA1, SA2, CT1, RAN3; cc: -; contact: Ericsson)	SA1, SA2, CT1, RAN3	-	Ericsson		Rel-13	LTE_extDRX-Core	

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final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-154994	LS on inter-frequency and inter-PLMN discovery (to: RAN1, RAN3, RAN4; cc: -; contact: Qualcomm)	RAN1, RAN3, RAN4	-	Qualcomm		Rel-13	LTE_eD2D_Prox-Core	
R2-154995	LS on NAICS subset capability (to: RAN4; cc: -; contact: Qualcomm)	RAN4	-	Qualcomm		Rel-13	LTE_NAICS-Core	
R2-154996	Reply LS on ACDC mechanism (to: CT1; cc: SA1; contact: LGE)	CT1	SA1	LGE	R2-153041 = C1-153278	Rel-13	ACDC-RAN-Core	
R2-154998	LS on ProSe UE-to-Network relay (to: SA2, CT1; cc: - ; cotnact: LGE)	SA2, CT1	-	LGE		Rel-13	LTE_eD2D_Prox-Core	
R2-154999	LS on ProSe Direct Discovery out of coverage (to: SA2, CT1; cc: -; contact: LGE)	SA2, CT1	-	LGE		Rel-13	LTE_eD2D_Prox-Core	
R2-155000	LS on eDRX cycles (to: RAN4; cc: -; contact: Qualcomm)	RAN4	-	Qualcomm		Rel-13	LTE_extDRX-Core	
R2-155001	LS on warning systems for feMTC (to: SA1, CT1, RAN3; cc: -; contact: Ericsson)	SA1, CT1, RAN3	-	Ericsson		Rel-13	LTE_MTCe2_L1-Core	
R2-155003	LS on V2X message characteristics (to: RAN1, SA1, SA2, SA3; cc: -; contact: Ericsson)	RAN1, SA1, SA2, SA3	-	Ericsson	R2-154008 = R1-155014	Rel-13	FS_LTE_V2X	
R2-155004	Reply LS on a new measurement quantity for Multicarrier Load Distribution (to: RAN4; cc: RAN1; contact: Ericsson)	RAN4	RAN1	Ericsson	R2-154022 = R2-154022	Rel-13	LTE_MC_load-Core	
R2-155005	Response LS on features with an FGI bit dependency from an earlier release (to: RAN5; cc: RAN4; contact: Ericsson)	RAN5	RAN4	Ericsson	R2-154014 = R5-154052	Rel-10	TEI10	

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final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-155006	LS on CA band combination indexing (to: RAN4; cc: -; contact: Nokia Networks)	RAN4	-	Nokia Networks		Rel-13	LTE_CA_enh_b5C-Core	

Summary:

In total 27 outgoing LSs of RAN2 #91bis:
4 on UTRA, 23 on LTE, 0 on joint aspects

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Annex E:
List of in principle agreed draftCRs of RAN2 #91bis

In total 46 in principle agreed draftCRs of RAN2 #91bis (including 14 which are implicitly in principle agreed, marked in yellow, since their cat.F CRs were in principle agreed) are requested to resubmitted as CRs to RAN2 #92 (incl. cat.A CRs) then these in principle agreed draftCR will be treated as in principle agreed CR in RAN2 #92.

The following table includes all in principle agreed CRs of RAN2 #91bis and CR numbers will be allocated when reserved via 3 GU:

RAN2 #91bis Tdoc	Title	Source	Spec	CR#	rev	cat	Release	SI/WI
R2-154041	Definitions of sidelink terminologies in TS 36.306	Huawei, HiSilicon	36.306			F	Rel-12	LTE_D2D_Prox-Core
R2-154098	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	25.302			F	Rel-10	RANimp-DC_HSUPA, 4C_HSDPA
	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	25.302			A	Rel-11	RANimp-DC_HSUPA, 4C_HSDPA
	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	25.302			A	Rel-12	RANimp-DC_HSUPA, 4C_HSDPA
	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	25.302			A	Rel-13	RANimp-DC_HSUPA, 4C_HSDPA
R2-154133	Correction on SCG release	ZTE Corporation	36.331			F	Rel-12	LTE_SC_enh_dualC-Core
R2-154149	Paging optimization	Huawei, HiSilicon	36.331			B	Rel-13	TEI13
R2-154175	Correction on transparent MAC PDU	ZTE Corporation	36.321			F	Rel-12	TEI12
R2-154187	Clarification to SCG RLF timers and constants reconfiguration	Spreadtrum Communications	36.331			F	Rel-12	LTE_SC_enh_dualC-Core
R2-154212	Correction to triggerQuantityCSI-RS	Spreadtrum Communications,	36.331			F	Rel-12	LTE_SC_enh_L1-Core

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RAN2 #91bis Tdoc	Title	Source	Spec	CR#	rev	cat	Release	SI/WI
		CATR						
R2-154248	Correction on MAC header for SL-SCH	CATT	36.321			F	Rel-12	LTE_D2D_Prox-Core
R2-154403	Running RLC CR on extension of protocol formats	NTT DOCOMO INC., Nokia Networks (rapporteurs)	36.322			B	Rel-13	LTE_CA_enh_b5C-Core
R2-154407	Corrections to Sidelink	LG Electronics Inc.	36.323			F	Rel-12	LTE_D2D_Prox-Core
R2-154492	Introduction of PUCCH on SCell in CA	NTT DOCOMO INC.	36.302			B	Rel-13	LTE_CA_enh_b5C-Core
R2-154815	Correction to SystemTimeInfoCDMA2000 IE	Nokia Networks	36.331			F	Rel-11	LTE-L23, TEI11
	Correction to SystemTimeInfoCDMA2000 IE	Nokia Networks	36.331			A	Rel-12	LTE-L23, TEI11
R2-154843	Clarification on tdd-FDD-CA-PCellDuplex	Qualcomm Incorporated	36.306			F	Rel-13	LTE_CA_TDD_FDD-Core, LTE_SC_enh_dualC-Core
R2-154903	Corrections for sidelink in TS 36.321	Huawei, HiSilicon	36.321			F	Rel-12	LTE_D2D_Prox-Core
R2-154921	Extension of Frequency Priorities	Nokia Networks	36.331			B	Rel-13	LTE_MC_load-Core
R2-154923	Extension of Frequency Priorities	Nokia Networks	36.304			B	Rel-13	LTE_MC_load-Core
R2-154938	Clarification for configuring HARQ A/N repetition with Multiflow	Nokia Networks	25.331			F	Rel-11	HSDPA_MFTX
	Clarification for configuring HARQ A/N repetition with Multiflow	Nokia Networks	25.331			A	Rel-12	HSDPA_MFTX
	Clarification for configuring HARQ A/N repetition with Multiflow	Nokia Networks	25.331			A	Rel-13	HSDPA_MFTX
R2-154946	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	25.302			F	Rel-11	RANimp-DC_HSUPA, 4C_HSDPA, 8C_HSDPA

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RAN2 #91bis Tdoc	Title	Source	Spec	CR#	rev	cat	Release	SI/WI
	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	25.302			A	Rel-12	RANimp-DC_HSUPA, 4C_HSDPA, 8C_HSDPA
	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	25.302			A	Rel-13	RANimp-DC_HSUPA, 4C_HSDPA, 8C_HSDPA
R2-154948	Corrections to WLAN/3GPP radio interworking	Intel Corporation	25.304			F	Rel-12	UTRA_LTE_WLAN_interw-Core
R2-154954	Corrections to WLAN/3GPP radio interworking	Intel Corporation	25.331			F	Rel-12	UTRA_LTE_WLAN_interw-Core
	Corrections to WLAN/3GPP radio interworking	Intel Corporation	25.331			A	Rel-13	UTRA_LTE_WLAN_interw-Core
R2-154964	draftCR to correct UE messages to be sent only after security activation	Deutsche Telekom AG; Vodafone	36.331			F	Rel-10	TEI10
	draftCR to correct UE messages to be sent only after security activation	Deutsche Telekom AG; Vodafone	36.331			A	Rel-11	TEI10
	draftCR to correct UE messages to be sent only after security activation	Deutsche Telekom AG; Vodafone	36.331			A	Rel-12	TEI10
R2-154965	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	36.300			F	Rel-11	SPIA_IDC_LTE-Core
	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	36.300			A	Rel-12	SPIA_IDC_LTE-Core
	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	36.300			A	Rel-13	SPIA_IDC_LTE-Core
R2-154966	Clarification on FDD/TDD difference for UL CA IDC indication	Ericsson	36.331			F	Rel-11	SPIA_IDC_LTE-Core

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RAN2 #91bis Tdoc	Title	Source	Spec	CR#	rev	cat	Release	SI/WI
	Clarification on FDD/TDD difference for UL CA IDC indication	Ericsson	36.331			A	Rel-12	SPIA_IDC_LTE-Core
R2-154968	MCCH acquisiation for 1.4MHz MBSFN	ZTE Corporation	36.331			B	Rel-13	TEI13
R2-154970	Clarification on support of extened wait time	HTC Corporation	36.306			F	Rel-12	NIMTC-RAN_overload
R2-154971	Correction of need code definition terminology	Ericsson	36.331			F	Rel-12	TEI12
R2-154972	Correction on categories in supportedBandCombination	Ericsson	36.306			F	Rel-12	TEI12
R2-154973	Corrections on sidelink related description in TS 36.300	Huawei, HiSilicon	36.300			F	Rel-13	LTE_D2D_Prox-Core
R2-154974	Corrections to Sidelink in TS 36.302	Intel Corporation	36.302			F	Rel-13	LTE_D2D_Prox-Core
R2-154976	highPriorityAccess for MMTEL voice, MMTEL video and SMS	MediaTek Inc., Intel	36.331			F	Rel-12	SCM_LTE-Core
R2-154978	Correction to the support of Mobility State reporting	Intel Corporation	36.331			F	Rel-12	HetNet_eMOB_LTE-Core
R2-154979	Clarification on Pcell support	Vodafone	36.306			F	Rel-12	LTE_SC_enh_dualC-Core

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Annex F:
RAN WG2 meeting #91bis post processing

Email discussions/approvals

Rapporteur companies are requested to kick-off email discussions as soon as possible via the RAN2 email reflector. Important: In the beginning of the subject of each email the corresponding identifier [...] of the email discussion has to be used in order to allow sorting of the different email discussions.

Email discussions with finalisation by Thu 15.10.2015 midnight Pacific time, i.e. Fri 16.10.2015 9am CEST:

[91bis#01][LTE/WiFi] 36.300 CR (Intel)
- Update of running 36.300 CR to add all agreements from this meeting.
- Intended outcome: Endorsed CR (in R2-154997)

[91bis#02][LTE/eD2D] Running stage 2 CR (Qualcomm)
- Endorse running stage 2 CR capturing agreements from RAN2#91bis
- Intended outcome: Endorsed CR

[91bis#03][LTE/eDRX] Stage 2 CR (Qualcomm)
- Endorse a running stage 2 CR capturing all eDRX related agreements up to RAN2#91bis
- Intended outcome: Endorsed CR (R2-154920)

[91bis#04][LTE/LATRED] Text proposal for protocol evaluation and LS to RAN1 (Ericsson)
- Intended outcome 1: Agreed TP and TR to 36.881 v0.3.1
- Intended outcome 2: Agreed LS to RAN1 (R2-154949 - LS to RAN1 on evaluation agreements and conclusions)

[91bis#39][LTE/SC-PTM] Running Stage-2 CR (Huawei)
- Incorporate the related agreements of this meeting in the latest endorsed CR
- Intended outcome: Technically endorsed running 36.300 CR for the next meeting

Email discussions with finalisation by Thu 22.10.2015 midnight Pacific time, i.e. Fri 23.10.2015 9am CEST:

[91bis#05][LTE/MTC] 36.300 CR (Ericsson)
- Update running CR to 36.300 (in R2-154900).
- Intended outcome: Endorsed running CR.

[91bis#06][LTE/V2X] Capture agreements in TP (LG)
- Provide text proposal capturing the agreed scenarios and expected transport mechanisms
- Agree on definitions of multi-operator scenario.
- Intended outcome: Agreed text proposal.

[91bis#07][NB-IOT] Running 36.300 CR (Huawei)
- Capture agreements in a running stage-2 CR to 36.300 for NB-IOT
- Intended outcome: Endorsed running CR.

Email discussions with finalisation by Thu 05.11.2015 midnight Pacific time, i.e. Fri 06.11.15 9am CEST:

[91bis#08][LTE/LAA] Layer 3 filtering (Intel)
- Discussion on L3 filter reset vs modifying the measurement reporting, event triggering and TTT handling to ignore outdated measurements.
- Intended outcome: Email report to the next meeting.

[91bis#09][LTE/LAA] 36.331 CR (Huawei)
- Create CR to 36.331
- Intended outcome: Endorsed CR submitted to next meeting.

[91bis#10][LTE/CA-enh] UE capabilities (Nokia)
- Create baseline CR to 36.331 to include the mechanisms agreed so far. Baseline CR is to be used as a basis for discussion of other proposals.
- Details of fallback solution can also be discussed and if agreeable then can also be included in the baseline CR.
- Intended outcome: Agreeable baseline CR for next meeting.

[91bis#11][LTE/CA-eh] 36.331 CR and L1 parameters (Nokia)

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- Update running CR to 36.331 and discuss the L1 parameters when information is provided by RAN1.
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#12][LTE/CA-eh] 36.321 CR (Ericsson)
- Discuss running CR to 36.321 (The wording of the note will be discussed)
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#13][LTE/MTC] 36.331 CR (Ericsson)
- Create running CR to 36.331.
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#14][LTE/MTC] 36.321 CR (Ericsson)
- Create running CR to 36.321.
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#15][LTE/MTC] 36.304 CR (Huawei)
- Create running CR to 36.304.
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#16][LTE/MTC] System Information (Intel)
- Discussion on remaining system information aspects of MTC
- Intended outcome: Email discussion report to next meeting.

[91bis#17][LTE/MTC] Timers (Ericsson)
- Discussion on remaining timers.
- Intended outcome: Email discussion report to next meeting

[91bis#18][LTE/WiFi] LTE/WLAN Interworking enhancements (Huawei)
- Discussion to addressed: a/ whether RLM mechanism is applicable for LWI; b/ steering command; c/idle mode behaviour.
- Intended outcome: Email discussion report to next meeting.

[91bis#19][LTE/WiFi] Association confirmation message from UE to eNB (CATT)
- Discussion to address whether it is supported and, if so, how it is defined.
- Intended outcome: Email discussion report to next meeting.

[91bis#20][LTE/WiFi] UE feedback (Intel)
- Discussion to address whether it is supported and, if so, how it is defined.
- Intended outcome: Email discussion report to next meeting

[91bis#21][LTE/WiFi] UE capabilities (Qualcomm)
- Intended outcome: Email discussion report to next meeting

[91bis#22][LTE/DC-enh] 36.331 CR (NTT DOCOMO)
- Create running CR to 36.331.
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#23][LTE/iPos] 36.355 CR (NextNav)
- Create running CR to 36.355.
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#24][LTE/TEI13] Control of unattended traffic (Verizon)
- Email discussion to clarify how the overall mechanism is expected to work. Other solutions, including those that may already exist in 3GPP, to address the problem can also be discussed.
- Intended outcome: Email discussion report to next meeting

[91bis#25][LTE/CA-enh] PDCP control PDU (Nokia)
- Discussion on handling of huge PDCP control PDU (related to R2-154406)
- Intended outcome: Email discussion report to next meeting.

[91bis#26][LTE/CA-enh] L field in MAC header (Huawei)
- Discussion extension of L field in MAC header (related to R2-154342)
- Intended outcome: Email discussion report to next meeting.

[91bis#27][LTE/eD2D] UE-to NW relays (Qualcomm)
- Discuss whether other PS discovery services can also use the discovery pool for UE-to-Network Relay and whether there is a differentiation for discovery resource pool used by ProSe UE-to-Network Relay and in-coverage remote UE
- Confirm that: communication resource pool for ProSe UE-to-Network remote UE is the same as the pool for other PS ProSe communication [CB for relay UE based on agreement on whether the relay UE can be in idle mode].
- Whether the UE may select the UE-to-Network Relay which has the best link quality on PC5 and satisfies higher layer criteria
- Intended outcome: Email discussion report to next meeting.

[91bis#28][LTE/eD2D] 36.331 CR (Samsung)
- Review initial 36.331 CR capturing agreements reached so far

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- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#29][LTE/eD2D] MAC CR (Ericsson)
- Review initial 36.321 CR and provide comments to rapporteur
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#30][LTE/eDRX] eDRX aspects (Qualcomm)
- Discuss details of eDRX formula and the starting point of the paging window.
- Discuss how PTW is configured (whether it is NAS, eNB, or fixed), value range of PTW and whether the UE monitors all paging occasion within a window or only a limited number of POs within the window. Discuss what legacy DRX cycles are used during the paging window.
- Discuss system information update
- Intended outcome: Recommend proposals as inputs to next meeting

[91bis#31][LTE/D2D] Inter-carrier/PLMN discovery (Qualcomm)
- Discuss the criteria the UE should meet in order be able to transmit on the other PS and commercial carrier (e.g. whether S criterion should be met)
- Intended outcome: Email discussion report to next meeting

[91bis#32][LTE/D2D] Gap configuration (Qualcomm)
- Discuss and conclude on UE behaviour during tx gaps, the gaps request and configuration format for rx/tx, gap request triggers and whether the request is per active cell.
- Intended outcome: Email discussion report to next meeting

[91bis#33][LTE/LATRED] L2 enhancements (Ericsson)
- Capture agreements on SPS activation/deactivation
- Intended outcome: Text proposal to capture the advantages/disadvantages of each approach.

[91bis#34][LTE/LATRED] CB-PUSCH (Huawei)
- Create text proposal to capture the resource efficiency evaluations of existing solutions and CB-PUSCH solutions and gains. The TP will also capture a summary of the assumptions and how the solution works.
- Discuss whether a conclusion on the solution itself can be reached
- Intended outcome: Agreed text proposal and email discussion report on the conclusions for the solution

[91bis#35][LTE/LATRED] Handover evaluations and solutions (Intel)
- 1st phase – Oct. 23rd
  - Agree on handover evaluation numbers
  - Conclude on the main handover steps that contribute to handover delays
  - Initial assessments on the steps we want to address
- 2nd phase – Nov. 4th
  - Capture potential solutions that address enhancements to the different steps identified in step 1 and the gains/complexity associated to each solution. NOTE: only solutions that have been already proposed can be included in the second phase.
- Intended outcome: Agreed text proposal

[91bis#36][LTE/V2X] Initial latency evaluation on agreed scenarios (LG)
- Agree on evaluation assumptions. On multi-operator, so far the assumption is that two user can be connected to different operators and single and two eNB deployments can be considered.
- Provide an initial analysis of latency numbers.
- Intended outcome: Provide a summary of evaluation assumption and initial latency numbers

[91bis#37][LTE/MCLD] 36.331 CR (Ericsson)
- Create running CR to 36.331.
- Intended outcome: Endorsed running CR submitted to next meeting.

[91bis#38][LTE/SC-PTM] SC-PTM UE capability and other issues (Huawei)
- Discuss UE capability
- Discuss PDCP layer related issue
- Discuss whether using SI or MCCH to indicate the availability in neighbour cells of each MBMS service included in SC-MCCH in the source cell
- Discuss other potential left issues in the scope of WID

=> Intended outcome: Email discussion report for the next meeting

[91bis#40][LTE/SC-PTM] Running 36.331 CR (Huawei)
- Capture the related agreements from this meeting

=> Intended outcome: Technically endorsed running 36.331 CR for the next meeting

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[91bis#41][LTE/SCPTM] Running 36.321 CR (ZTE)
- Capture agreements from this meeting
=> Intended outcome: Technically endorsed running 36.321 CR for the next meeting

[91bis#42][LTE/feMDT] Running 37.320 CR (MediaTek)
- Capture agreements from this meeting
=> Intended outcome: Technically endorsed running 37.320 CR for the next meeting

[91bis#43][LTE/feMDT] Running 36.314 CR (Huawei)
- Capture agreements from this meeting
- Only capture eNB measurements
=> Intended outcome: Technically endorsed running 36.314 CR for the next meeting

[91bis#44][LTE/feMDT] Running 36.331 CR (Nokia Networks)
- Capture agreements from this meeting
=> Intended outcome: Technically endorsed running 36.331 CR for the next meeting

[91bis#45][LTE/ACDC] 36.331 CR (LG)
- Running 36.331 CR.
- Intended outcome : Draft CR into next meeting.

[91bis#46][NB-IOT] System information content (Intel)
- Discuss SI contents, all relevant SI, excluding parameters that are unknown due to undecided functionality.
- Intended outcome: Email discussion report into next meeting

[91bis#47][NB-IOT] System information scheduling (Ericsson)
- Discuss SI scheduling, identify and analyse the options
- Intended outcome: Email discussion report into next meeting

[91bis#48][NB-IOT] Coverage level change (Huawei)
- Identify and analyse the options for handling change of coverage levels
- Intended outcome: Email discussion report into next meeting

[91bis#49][UMTS/Retrievable configuration] Running CRs (Huawei)
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331 and 25.300
- Review running CR, provide comments and capture all open issues for input in the next meeting

[91bis#50][UMTS/Seamless URA_PCH] Running CRs – Huawei
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331, 25.300, 25.301
- Review running CR, provide comments and capture all open issues for input in the next meeting

[91bis#51][UMTS/Improved synchronized RRC procedures] Running CRs – Huawei
- Capture all RAN2 agreements made up to and including RAN291bis in 25.331, 25.300, 25.321
- Review running CR, provide comments and capture all open issues for input in the next meeting

[91bis#52][UMTS/eDRX] Running stage 3 CRs - Ericsson
- Intended Outcome: review stage-3 running CRs, to be provided as input to next RAN2

[91bis#53][UMTS/Power saving] – Sync error - Ericsson
- Intended Outcome: discuss pros/cons and conclude on the sync error issue

[91bis#54][UMTS/ACDC] Draft base line CRs for 25.331&25.304 till next meeting (ERICSSON)
- Intended outcome: Draft base line CRs for 25.331&25.304

[91bis#55][UMTS/Indoor positioning] – Running Stage 2 and Stage 3 CRs - NextNav
- Capture the agreements in stage 2 and review 25.331 CR

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Annex G:
LTE Breakout (UP) session

On Monday and on Tursday of RAN2 #91bis, in parallel to the main LTE session, an LTE User Plane session was held in room High live 4 (Level 2) chaired by session chairman SeungJune Yi (LG) addressing:

On Monday:
6.1.2 LTE: Rel-12 and earlier releases: User Plane
6.2.3.2 LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: User Plane
6.2.9.2 LTE Other Closed Rel-12 WIs: UP

On Tursday:
7.2.3 LTE: Rel-13: WI: CA enhancements: UP aspects

The corresponding report of this session R2-154890 was presented and approved on Fri in the joint session and the contents is provided in this Annex G for convenience reasons.

6 LTE: Rel-12 and earlier releases

6.1 LTE: Rel-11 and earlier

6.1.2 User Plane

The documents in this AI will be treated in the Legacy LTE Legacy LTE UP session.

R2-154345 Further discussion on MSI with zero length Samsung Electronics Co., Ltd discussion
=> Noted.
- Samsung want to clarify that if there is MAC SDU with zero length, the UE behavior is unspecified.
- ZTE think zero MAC SDU is error case, and hesitate to add a NOTE. Samsung think in this case the UE behavior is unpredictable, and want to add a NOTE to say that this is not intended behavior. Nokia think the consequence is that there is a MSI without any MAC SDU. Samsung think if all MBMS service ares suspended, the network can send fake data. ZTE think the MBMS data transmission should be synchronized across the network. Samsung think if MBMS service is suspended, the network does not need to synchronize. Nokia think the network can send 1 byte padding MAC SDU.
- Chairman wonders whether zero length MAC SDU is allowed from the current specification. ZTE think it shall not be allowed, but it is not clear from the current specification. Samsung think from the green highlighted text, it is clear that L=0 is not allowed. LG think the highlighted text does not necessarily mean that L=0 is not allowed.
- Samsung is ok with allowing L=0, but in this case want to add a NOTE. Nokia, Ericsson don't want to have a NOTE.
- ZTE think if all MBMS services are suspended, it should be specified that all network should not send MSI without MBMS MAC SDUs.

=> Zero length MAC SDU is allowed from the current specification.

R2-154872 Clarification on L field setting to zero Samsung Electronics Co., Ltd draftCR 36.321 12.7.0 D Rel-12 TEI12
late
=> The draftCR is not agreed.

Withdrawn:

R2-154346 Clarification on L field setting to zero Samsung Electronics Co., Ltd CR 36.321 12.7.0
=> Withdrawn.

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6.2 LTE: Rel-12

6.2.3 WI: LTE Device to Device Proximity Services - Radio Aspects

(LTE_D2D_Prox-Core, leading WG: RAN1, REL-12, started: Mar.14, **closed**: Mar.15, WID: RP-142043)

RAN1 TR 36.843 on D2D

6.2.3.2 User Plane

Documents in this agenda item will be treated in the Legacy LTE UP session.

R2-154042 Corrections for sidelink in TS 36.321 Huawei, HiSilicon draftCR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
1st change
=> Ok

2nd change
=> Remove "TS 23.303"

3rd change
- Samsung think it is already there in 36.300, so don't want to add. LG, QC think having it is clear and support the change.

=> Change the first sentence as "The Logical Channel ID field uniquely identifies the logical channel instance within the scope of one Source Layer-2 ID and Destination Layer-2 ID pair of the corresponding MAC SDU or the type of the corresponding MAC control element or padding as described in table 6.2.4-1."

=> The draftCR should be based on the latest specification.
=> With the above changes, the draftCR is in principle agreed in R2-154903.

R2-154248 Correction on MAC header for SL-SCH CATT draftCR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
wrong spec ver number used in CR cover; it should be 12.7.0
=> The draftCR should be based on the latest specification.
=> The draftCR is in principle agreed.

R2-154407 Corrections to Sidelink LG Electronics Inc. draftCR 36.323 12.4.0 F Rel-12 LTE_D2D_Prox-Core
=> The draftCR is in principle agreed.

Withdrawn:

R2-154054 Correction on MAC header for SL-SCH CATT CR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
=> Withdrawn.

R2-154314 Corrections to Sidelink LG Electronics Inc. CR 36.323 12.4.0 F Rel-12 LTE_D2D_Prox-Core
=> Withdrawn.

6.2.9 LTE Other Closed Rel-12 WIs

6.2.9.2 LTE Other Closed Rel-12 WIs – UP

The documents in this AI will be treated in the Legacy LT UP session.

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R2-154175 Correction on transparent MAC PDU ZTE Corporation draftCR 36.321 12.7.0 F Rel-12 TEI12
wrong spec ver number used in CR cover; it should be 12.7.0
- Samsung wonders whether it is possible to fit the SIB into the fixed MAC PDU size. Chairman think the size should be fixed if something needs to be transmitted on transparent MAC. QC clarified that RRC can add padding. Intel is ok with the CR.

=> The isolated impact analysis should be added in cover page.
=> The draftCR is in principle agreed.

R2-154273 Scheduling Request on PUCCH with UL-SCH resource MediaTek Inc. draftCR 36.321 12.7.0 F Rel-12 LTE_CA-Core, TEI12
wrong spec ver number & WI code used in CR cover: TEI12 should be added since LTE-CA-Core was a REL-10 WI code
- Nokia think the CR is not correct because RAN1 allows to send only UCI on PUSCH. Ericsson agrees. MediaTek think sending DSR is allowed from RAN1 specification. Intel think the text “if the MAC entity has a valid PUCCH resource for SR configured for this TTI” covers this case.
- Chairman think RAN1 spec allows to send SR but RAN2 spec does not allow. However, chairman wonders why the UE sends SR if there is UL-SCH. Nokia think the UE shall not send SR if UL-SCH is available. Samsung think the issue has been discussed several times before, and RAN2 agreed to stick to the current specification.

=> Stick to the current specification.
=> The draftCR is not agreed.

7 LTE Rel-13

7.2 WI: CA enhancements

(LTE_CA_enh_b5C-Core, leading WG: RAN1, started: Dec. 14, target: Dec. 15, WID: RP-150771)

Time budget: 1 TU (+ 1TU for stage-3 UP aspects)

7.2.3 UP aspects

Stage-3 UP aspects

7.2.3.1 B5C

E.g. Header formats, …

Type2 PH

R2-154408 Condition to include Type2 RHNTT DOCOMO INC. discussion
=> Noted.
[moved from 7.2.3.2 to 7.2.3.1]

Proposal1
- Samsung think the simplest way is to follow legacy rule, i.e. depending on whether simultaneous PUCCH-PUSCH is configured or not. Nokia think if we follow legacy rule, there may be the case when the UE actually transmits PUCCH but Type 2 PH is not reported. Thus, Nokia supports the proposal. Huawei think the simultaneous PUCCH-PUSCH means that PUCCH and PUSCH are transmitted on the same cell. Ericsson think the issue should be involved with RAN1. DOCOMO clarified that RAN1 already decided that the simultaneous PUCCH-PUSCH is configured per PUCCH group. LG agree with DOCOMO. CATT wants to follow the rule of DC. Nokia think following DC rule makes the

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UE behavior more complex. CATT think following DC rule does not make any complexity. Nokia clarified that in DC two MAC entities are defined, but in eCA there is only one MAC entity. LG think if we follow DC rule there is a problem in case 2b. Nokia agree with LG. LG think option 2 does not solve the problem when the simultaneous PUCCH-PUSCH is not configured for both PCell and PUCCH SCell. Intel prefer option3.

Option1: follow legacy rule, i.e. presence of PCell Type 2 PH depends on the simultaneous PUCCH-PUSCH configuration of PCell, and presence of PUCCH SCell Type 2 PH depends on the simultaneous PUCCH-PUSCH configuration of PUCCH SCell.
Option2: follow DC rule, i.e. presence of PCell Type 2 PH depends on the simultaneous PUCCH-PUSCH configuration of PCell, and the PUCCH SCell Type 2 PH is always included.
Option3: if PUCCH SCell is configured and activated, include Type 2 PH for both PCell and PUCCH SCell always

=> Follow Option3, i.e. if PUCCH SCell is configured and activated, include Type 2 PH for both PCell and PUCCH SCell always.

Proposal2
- Samsung is fine with the proposal.

=> If PUCCH SCell is configured, the Type1 PH and Type2 PH of PCell are always included.
=> If PUCCH SCell is configured and activated, the Type1 PH and Type2 PH of PUCCH SCell are always included.
=> If PUCCH SCell is configured but deactivated, the Type1 PH and Type2 PH of PUCCH SCell are not included.

R2-154594 Type 2 PH reporting with PUCCH on Scell Nokia Networks discussion
[moved from 7.2.3.2 to 7.2.3.1]

=> The document is not treated as already covered by previous discussion.

LCID

R2-154320 LCID for PHR and A/D MAC CE LG Electronics Inc. discussion
- Ericsson think there is no backward compatibility issue in option5. Ericsson think the eNB can know the actual PHR format based on the configuration of PUCCH SCell.

=> Noted.

R2-154748 LCIDs for Act/Deact and PHR MAC CEs Nokia Networks discussion
=> Noted.

R2-154348 Remaining issues on extended PHR2 Samsung Electronics Co., Ltd discussion
=> Noted.

R2-154185 New LCID(s) for activation command and extended PHR MAC CE Huawei, HiSilicon discussion
=> Noted.

PHR options
Option1: No new LCID for new PHR (Ericsson, Huawei)
Option2: 1 new LCID for new PHR when PUCCH SCell is configured (Nokia)
Option3: 1 new LCID for new PHR when extend PHR2 is configured (Samsung, LG)
Option4: 2 new LCIDs for new PHR, one for 1 byte Ci field, one for 4 bytes Ci field (LG)
Option5: 3 new LCIDs (Ericsson)

- Ericsson think if there is a ambiguity problem, we should go for option5. All other options do not solve the ambiguity problem. LG think it is a matter of taste of each company.
- Nokia think if we go for option3 or option4, the DC PHR may also need to be updated. Samsung think if we consider DC, a new LCID should be introduced.

Show of hands

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Option1: No new LCID for new PHR [7]
Option2: 1 new LCID for new PHR when PUCCH SCell is configured [2]
Option3: 1 new LCID for new PHR when extend PHR2 is configured [7]

- Huawei wonders how the DC case can be considered with option 3. Samsung think eCA is not configured with DC, so we don't need to worry about that.
- CATT think option3 is better than option1 only in terms of spec implementation. LG think clarity is more important than saving 1 LCID. Ericsson think there is no complexity with option1.

2nd show of hands
Option1: No new LCID for new PHR [9]
Option3: 1 new LCID for new PHR when extend PHR2 is configured [8]

=> No new LCID for new PHR.

A/D options
Option1: New LCID for 4 bytes AD MAC CE
Option2: New LCID for both 1 byte and 4 bytes AD MAC CE. L field is required as it is variable length.
Option3: No new LCID for AD MAC CE. L field is not required.

- ZTE think option2 is useless because legacy format already supports 1 byte AD MAC CE.
- LG think option3 changes the legacy AD MAC CE format.

Show of hands
Option1: New LCID for 4 bytes AD MAC CE [9]
Option3: No new LCID for AD MAC CE. L field is not required. [8]

=> New LCID for 4 bytes AD MAC CE.

R2-154420 On introducing the LCID for new A/D MAC CE Samsung Telecommunications discussion
R2-154125 LCID for Activation/deactivation MAC CE CATT discussion
R2-154639 LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs Ericsson discussion
=> All documents are not treated as already covered by previous discussion.

R2-154419 Introducing the LCID for new A/D MAC CE Samsung Telecommunications draftCR 36.321 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154347 Correction on extended PHR2 format Samsung Electronics Co., Ltd pCR 36.321 Rel-13 LTE_CA_enh_b5C-Core
wrong Type used; it should be "draftCR"
=> All draftCRs are not treated.

PDCP SN

R2-154326 Size of extended PDCP SN SAMSUNG Electronics Co., Ltd. discussion
=> Noted.
- Nokia think even if the extended PDCP size is 18 bits, huge PDCP control PDU problem does not disappear. LG agree with Nokia. Ericsson, QC is fine with 18 bits.
- ZTE think huge PDCP control PDU problem typically does not happen. Samsung think the PDCP status report in X2 depends on the PDCP SN size regardless of how many PDCP PDUs are in the air during the HO.
- Samsung think the UE memory also depends on the PDCP SN size.

=> Extend PDCP SN size to 18bits.

R2-154406 Handling of huge PDCP control PDU NTT DOCOMO INC. discussion
=> Noted.

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Proposal1
- Nokia think huge PDCP control PDU is problem in terms of latency. Samsung think the solution direction would be different depending on whether it is significant problem or not, and want to go for simple solution like limiting the size of PDCP control PDU. LG think at HO the radio condition would be bad and not many PDCP PDUs are in the air, so typically the huge size of PDCP control would not happen. Intel, Huawei agree with LG. LG, Ericsson also want to go for simple solution like segmenting the PDCP control PDU.
- Samsung, DOCOMO, QC want to define a UE behavior in case the PDCP control PDU size is huge.

Handling of huge PDCP control PDU
Option1: Limit the size of PDCP status report (e.g., around 8200 bytes)
Option2: Split the information of status report over multiple control PDUs.

- Nokia clarified that in option1 the FSN is the first missing SN.
- DOCOMO clarified that in option2 every PDCP status report should include 1 bit to indicate whether it is the last segment or not.

=> Limit the size of PDCP control PDU.
=> The maximum size and its configurability is FFS.
=> Whether a status report is split into multiple PDCP control PDUs is FFS.
=> [EMAILDISC] Handling of huge PDCP control PDU (Nokia)

R2-154593 PDCP Status PDU with PDCP SN extension Nokia Networks discussion
=> Not treated.
=> E-mail discussion includes this.

UM RLC SN

R2-154330 Necessity of UM RLC SN extension SAMSUNG Electronics Co., Ltd. discussion
=> Noted.
R2-154343 Discussion on extension of UM RLC SN Huawei, HiSilicon discussion
=> Noted.

Discussion
- Ericsson, LG, Nokia think we don't need to extend RLC SN for UM.

=> No extension of RLC SN for UM.

L field

R2-154342 Further discussion on extension of L field in MAC PDU Huawei, HiSilicon discussion
=> Noted.

R2-154327 Extension of L field in the MAC header SAMSUNG Electronics Co., Ltd. discussion
=> Noted.

R2-154673 Open issues on L2 UP headers extension Ericsson discussion
=> Noted.

Discussion
- Nokia has slight preference on Huawei format.
- Nokia think we don't have to make it configurable to use R bit. If it is made configurable, there may be ambiguity problem during reconfiguration. Intel shares Nokia's concern. Samsung think there should no issue during reconfiguration because R bit indicates whether a new format is used or not.
- Huawei think having fixed size would be simple.

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=> [EMAILDISC] Extension of L field in MAC header (Huawei). The relation to SO field can also be discussed in e-mail.

R2-154328 Extended L field in MAC subheader SAMSUNG Electronics Co., Ltd. draftCR 36.321 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154329 Signaling support for Extended L field in MAC subheader SAMSUNG Electronics Co., Ltd. draftCR 36.331 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154674 Extending MAC protocol header Ericsson draftCR 36.321 12.7.0 B Rel-13 LTE_CA_enh_b5C-Core
wrong spec ver number used in CR cover; it should be 12.7.0
=> All draftCRs are postponed.

Configuration of extended L2 header

R2-154405 Configuration of extended L2 header NTT DOCOMO INC. discussion
=> Noted.
R2-154331 Combination of extended L2 headers SAMSUNG Electronics Co., Ltd. discussion
=> Noted.

Discussion
- DOCOMO think the extension of L field is to support 8 layer MIMO. Ericsson, Huawei, LG want to have separate configuration.
- Nokia wonders whether the RLC SN and SO should be configured separately.

=> Separate configuration of extended L2 headers. RLC SN and SO should be configured together.

Running CR

R2-154403 Running RLC CR on extension of protocol formats NTT DOCOMO INC., Nokia Networks (rapporteurs) draftCR 36.322 12.3.0 B Rel-13 LTE_CA_enh_b5C-Core
=> The draftCR is in principle agreed.

R2-154410 Introduction of enhanced CA in PDCP LG Electronics Inc. draftCR 36.323 12.4.0 B Rel-13 LTE_CA_enh_b5C-Core
[moved from 7.2.1 to 7.2.3.1]

=> Remove PDCP Control PDU change.
=> Update the PDCP SN to 18 bits.
=> [CBF] Update of the PDCP draftCR will be provided in R2-154902 (LG).

R2-154675 Extending RLC protocol header Ericsson draftCR 36.322 12.2.0 B Rel-13 LTE_CA_enh_b5C-Core
R2-154676 Extending PDCP protocol header Ericsson draftCR 36.323 12.4.0 B Rel-13 LTE_CA_enh_b5C-Core
=> All draftCRs are not treated.

Withdrawn:

R2-154136 Usage of new LCID(s) or not for Rel-13 extended PHR MAC CE Huawei, HiSilicon discussion
=> Withdrawn.

R2-154139 Usage of new LCID or not for the 4 bytes A/D MAC CE Huawei, HiSilicon discussion
=> Withdrawn.

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7.2.3.2 PUCCH on SCell

SR

R2-154126 Clarification on valid PUCCH SR resource CATT discussion
- LG think even if the UE considers SR resource on deactivated SCell valid, there would be no big problem. Ericsson think there may be impact on SR counter. LG think the problem occurs only when the SCell is newly added. CATT think SR is pending if it is not transmitted. HTC think valid SR should be clarified, and want to have a NOTE proposed by Ericsson.

=> Noted.

R2-154640 Valid SR resources Ericsson discussion
=> Noted.
- CATT is not sure about timing of “complete activation” and “complete deactivation”. CATT want to refer to RAN1 on the act/deact timing. MediaTek think the UE can send SR even before the SCell is activated. MediaTek think the RAN1 timing is the latest time the UE completes activation. Sharp think the timing issue should be decided in RAN1.
- Panasonic think the UE shall consider SR valid only if the TAT is running. LG think we didn’t mention about PCell on SR resource validity when the PTAT is not running.
- Nokia suggest the NOTE “the SR is valid when it can be transmitted”.

=> Add a NOTE “PUCCH resource for SR is valid when it can be transmitted”.

R2-154827 Remaining issues on SR on PUCCH SCell Sharp discussion
=> Noted.

[moved from 7.2.2.2 to 7.2.3.2]

- Nokia think there should be only one dsr-TransMax configured per UE. LG wonders what if the SR is configured only on PUCCH SCell. Nokia think dsr-TransMax in SR-config for PUCCH SCell is made optional. Huawei think a critical extension may be used. Sharp think if we want to make dsr-TransMax optional, we need a new IE. ZTE think we need a non-critical extension with a new IE. Nokia suggest to have only one dsr-TransMax per UE.
- LG think the UE may use only the latest dsr-TransMax.

=> From MAC point of view, there is only one dsr-TransMax configured.

R2-154463 Clarification on SR prohibit timer NEC Corporation discussion
- Nokia think in current MAC specification, the timer handling is specified in MAC reconfiguration, so nothing is needed.

=> Noted.

sCellDeactivationTimer

R2-154324 sCellDeactivationTimer handling upon PUCCH release LG Electronics Inc. discussion
=> Postponed.

R2-154451 Discussion on sCellDeactivationTiemr HTC Corporation discussion
=> Postponed.

A/N feedback

R2-154127 Clarification on A/N feedback for DL transmission CATT discussion
=> Noted.
- Nokia, Intel think the MAC is not aware of whether the ACK/NACK is transmitted on PUCCH or PUSCH. Ericsson ask if there is any problem to indicate ACK/NACK for PUCCH SCell. CATT think L1 does not know whether the PUCCH SCell is in-sync or out-of-sync.

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=> Replace “pTAG” wtih “TAG that the associated (PUCCH Serving Cell) belongs to” in section 5.3.2.2.

Running CR

R2-154492 Introduction of PUCCH on SCell in CA NTT DOCOMO INC. draftCR 36.302 12.5.0 B Rel-13 LTE_CA_enh_b5C-Core
=> The draftCR is in principle agreed.

Withdrawn

R2-154402 Introduction of PUCCH on SCell in CA NTT DOCOMO INC. CR 36.302 12.5.0 B Rel-13 LTE_CA_enh_b5C-Core
=> Withdrawn.

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Summary of the LTE UP session

In-principle Agreed draftCRs

R2-154903 Corrections for sidelink in TS 36.321 Huawei, HiSilicon draftCR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
R2-154248 Correction on MAC header for SL-SCH CATT draftCR 36.321 12.7.0 F Rel-12 LTE_D2D_Prox-Core
R2-154407 Corrections to Sidelink LG Electronics Inc. draftCR 36.323 12.4.0 F Rel-12 LTE_D2D_Prox-Core
R2-154175 Correction on transparent MAC PDU ZTE Corporation draftCR 36.321 12.7.0 F Rel-12 TEI12
R2-154403 Running RLC CR on extension of protocol formats NTT DOCOMO INC., Nokia Networks (rapporteurs) draftCR 36.322 12.3.0 B Rel-13 LTE_CA_enh_b5C-Core
R2-154492 Introduction of PUCCH on SCell in CA NTT DOCOMO INC. draftCR 36.302 12.5.0 B Rel-13 LTE_CA_enh_b5C-Core

Agreed outgoing LS

None

Comeback on Friday

R2-154902 Introduction of enhanced CA in PDCP LG Electronics Inc. draftCR 36.323 12.4.0 B Rel-13 LTE_CA_enh_b5C-Core

E-mail discussion for the next meeting

Rel-13 CA enhancements: Handling of huge PDCP control PDU (Nokia, related to R2-154406).
Rel-13 CA enhancements: Extension of L field in MAC header (Huawei, related to R2-154342).

Comeback at the next meeting

None

Agreements on Rel-13 items

CA enhancements

=> Follow Option3, i.e. if PUCCH SCell is configured and activated, include Type 2 PH for both PCell and PUCCH SCell always.
=> If PUCCH SCell is configured, the Type1 PH and Type2 PH of PCell are always included.
=> If PUCCH SCell is configured and activated, the Type1 PH and Type2 PH of PUCCH SCell are always included.
=> If PUCCH SCell is configured but deactivated, the Type1 PH and Type2 PH of PUCCH SCell are not included.
=> No new LCID for new PHR.
=> New LCID for 4 bytes AD MAC CE.
=> Extend PDCP SN size to 18bits.
=> Limit the size of PDCP control PDU.
=> No extension of RLC SN for UM.

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=> Separate configuration of extended L2 headers. RLC SN and SO should be configured together.
=> Add a NOTE “PUCCH resource for SR is valid when it can be transmitted”.
=> From MAC point of view, there is only one dsr-TransMax configured.
=> Replace “pTAG” wtih “TAG that the associated (PUCCH Serving Cell) belongs to” in section 5.3.2.2.

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Annex H:
LTE Breakout (ProSe, eDRX, V2X and LATRED) session

On Tuesday, Wednesday and Tursday of RAN2 #91bis, in parallel to the main LTE session, an LTE ProSe, eDRX, V2X and LATRED session was held in room High live 4 (Level 2) chaired by RAN2 vice-chairman Diana Pani (Interdigital) addressing:

On Monday:
7.10 LTE: Rel-13: SI: Study on Latency reduction techniques for LTE

On Tuesday:
7.9 LTE: Rel-13: WI: RAN enhancements for extended DRX in LTE
7.11 LTE: Rel-13: SI: Feasibility Study on LTE-based V2X Services
7.5 LTE: Rel-13: WI: ProSe enhancements

On Tursday:
7.5 LTE: Rel-13: WI: ProSe enhancements

The corresponding report of this session R2-154891 was presented and approved on Fri in the joint session and the contents is provided in this Annex H for convenience reasons.

7.5 WI: ProSe enhancements

(LTE_eD2D_Prox-Core, leading WG: RAN2, started: Dec. 14, target: Dec. 15, WID: RP-150441)

Time budget: 3 TU

Incoming LSs

R2-154004 Reply LS to S2-152699 = R2-153034 on ProSe coarse proximity estimation based on path loss (R1-154871; contact: Intel) RAN1 LS in cc: RAN2Rel-13 eProSe
=> Noted

R2-154006 LS on RAN1 agreements at RAN1#82 (R1-155009; contact: Qualcomm) RAN1 LS in to: RAN2 Rel-13 LTE_eD2D_Prox-Core
=> Noted

R2-154010 Reply LS to R1-153553 = R2-152020 on Sidelink measurements for relay UE selection (R4-155129; contact: Qualcomm) RAN4 LS in
cc: RAN2 Rel-13 LTE_eD2D_Prox-Core
=> Noted

✉ **[LTE/eD2D – UE-to NW relays] - Discuss open issues - Qualcomm**
- Discuss whether other PS discovery services can also use the discovery pool for UE-to-Network Relay and whether there is a differentiation for discovery resource pool used by ProSe UE-to-Network Relay and in-coverage remote UE
- confirm that: communication resource pool for ProSe UE-to-Network remote UE is the same as the pool for other PS ProSe communication [CB for relay UE based on agreement on whether the relay UE can be in idle mode].
- Whether the UE may select the UE-to-Network Relay which has the best link quality on PC5 and satisfies higher layer criteria

Deadline: Nov. 4th

✉ **[LTE/eD2D – Stage 2] – Running stage 2 CR – Qualcomm**
- Endorse running stage 2 CR capturing agreements from RAN2#91bis
- One week after meeting

Running CR

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The technically endorsed running 36.300 CR from RAN2-91 is available in R2-153890 (result of [91#16]).

R2-154737 Capturing RAN2 agreements on eSL (REL-13) in 36.331 Samsung Telecommunications other

Moved from 7.5.5

- Ericsson wonders if we have ruled out the possibility of having another SIB for relay purposes. Samsung suggested extended bc it is simpler. Ericsson is concerned that we are getting close to the limit. Qualcomm thinks that we also need to think about multiple pools for inter-freq/PLMN discovery. Nokia Net thinks we should minimize number of SIBs to minimize scheduling complexity.
- US gov we need to think about the new pools introduced as well (up to 8)

=> Take the existing SIB19 as a baseline and if we find a problem we will solve it

- Nokia Net thinks that it would be good to have a list of open issues

=> The rapporteur will provide a full list of open issues over the reflector
=> LG volunteers to provide the 36.304
=> Noted

✉ **[LTE/eD2D] – 36.331 - Samsung**

- Review initial 36.331 CR capturing agreements reached so far
- Deadline: until next meeting

R2-154162 Introduction of eD2D LTE_eD2D_Prox-Core Ericsson draftCR 36.321 12.7.0 B Rel-13

wrong spec ver number used in CR cover; it should be 12.7.0

=> Postponed

✉ **[LTE/eD2D] – MAC CR – Ericsson**

- Review initial 36.321 CR and provide comments to rapporteur
- Deadline: until next meeting

7.5.1 UE-to-Network Relays

7.5.1.1 Relay UE initiation/discovery

Can broadcast discovery resources be used in connected mode? Use of thresholds for relay UEs in connected mode?

R2-154798 Open Issues of ProSe UE-to-Network relay discussion Qualcomm Incorporated, ZTE, InterDigital, Intel

-

Proposal 1: eNB may broadcast a minimum and/or maximum Uu link quality threshold that UE needs to respect before requesting ProSe UE-to-Network discovery transmission resources. The eNB may configure none, one of the threshold or both thresholds.

- Panasonic wonders if this is for connected mode UE. QC confirms

Proposal 2: There is no distinction between model A and Model B at AS level.

- CATT wonders if this is a for a relay UE

Proposal 3: Other PS discovery services can also use the discovery pool for UE-to-Network Relay.

- Ericsson wonders what the other PS services refer to. Qualcomm thinks that group member discover and TMGI. Ericsson agrees with this proposal.
- Huawei wonders how the AS stratum know what type of discovery is being transmitted. Qualcomm has the understanding that the format will be different. Huawei assumes that Rel-12 allows PS to be transmitted so they are not sure how the UE differentiates between Rel-12 PS discovery and Rel-13 PS discovery. If a Rel-13 UE only transmits PS discovery on the Rel-13 pool then Rel-12 UE will not be able to discovery these UEs. Nokia Net thinks that maybe we should investigate more the implications of this agreement. Samsung agrees and wonders what is the purpose of having a separate pool. Also the relay discovery pool is being used for measurements so it would be better to keep

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them separate. Qualcomm thinks that this is not a big problem as there won't be much collisions.
- Qualcomm thinks that we can define a separate tx pool and the rx pool can contain both Rel-12 and Rel-13 tx pools.
- Huawei would like to understand if PS pools are only in PS carriers.
- Ericsson thinks introducing multiple pools may become problematic.
- US government thinks that we should have a different PS pool for other purposes other than group member discovery and this pool should be different from commercial pool.
- Ericsson thinks that we need to think about inter-operability issues between UEs and UEs.
- ZTE wonders if Rel-12 is really used for PS discovery.

Proposal 4: There is no differentiation for discovery resource pool used by ProSe UE-to-Network Relay and Remote UE.
- Ericsson thinks that this is a configuration choice and what does it mean in terms of specifications.
- Huawei thinks we should keep it open and agree together with the previous proposal. Qualcomm explains that it is important to have the same pool as the periodicities of these pools need to be aligned. ZTE now sees an issue with this approach as if the UE is out of coverage how can it have the same configuration as the relay UE.

Proposal 6: When a UE moves from in-coverage to out of coverage and vice versa it follows Rel-12 behaviour for using Sidelink Communication resources (i.e. Mode 1 resource, Exception pool, pre-configured resource pool) for ProSe UE-to-Network Relay Operation.
- LG wonders if a separate exceptional pool only for relay. Qualcomm thinks it is the same pool.
- Panasonic indicates that the UE uses the exception pool only after T300 expires. In this case the interruption time may be large for out-of-coverage to in-coverage. ZTE thinks that this is a left over from Rel-12 and can address it now.
- Panasonic thinks that T300 behaviour doesn't help the UE in anyway.
- Ericsson wants to confirm that this is only for remote UE.

Proposal 7: Communication resource pool for ProSe UE-to-Network relay is the same as the pool for other PS ProSe communication.
- Huawei wonders if this approach allows the network to independently control group communication and relay communications. Ericsson wonders if this is a case we want to support. Huawei would like to allow group communication but not relay for example. Ericsson agrees with Huawei that would like to support this case, but we can maybe agree to this proposal and other mechanisms can allow us to independently control. US gov thinks we need a technical reason why this is needed as from a service requirement this is not necessary.

Proposal 8: The Uu link quality Threshold is provided in SIB19, and can be used in both RRC_IDLE and RRC_CONNECTED by Remote UE to transmit discovery solicitation message if the Uu link quality at the UE is below this threshold.
- If there is no threshold what is the UE behaviour? Qualcomm this that if there is no threshold the UE will transmit. Huawei thinks that if there is no threshold the UE shouldn't transmit.
- Blackberry wonders if the UE should initiate discovery when neighbouring cells are available for cell reselection. QC thinks that this covered by legacy behaviour, the UE would perform reselection and use the threshold from the other cell.
- LG wants to confirm that rx pool is also separate for discovery. QC confirms.

Proposal 10
- Huawei doesn't think we should limit the idle mode to eMBMS case. ZTE doesn't think that there is a use case for other services and we discussed this in the last meeting. US gov wonders what about SC-PTM.

=> Noted

R2-154045 Discussion on relay initiation and relay discovery CATT discussion

=> Not treated

Agreements:
- eNB may broadcast a minimum and/or maximum Uu link quality threshold that a relay UE needs to respect before triggering the request for ProSe UE-to-Network discovery transmission resources. The eNB may configure none, one of the threshold or both thresholds. FFS how stage three can capture always allowing the UE to request resources, either by no threshold or by thresholds

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allowing a wide range of values.)
- The eNB is not made aware whether model A or model B discovery is being performed by the UE.
- FFS: Can other PS discovery services can also use the discovery pool for UE-to-Network Relay
- FFS: There is no differentiation for discovery resource pool used by ProSe UE-to-Network Relay and in-coverage remote UE
- Similar to Rel-12, UEs (both Relay and Remote) cannot use transmission resources provided by broadcast signalling when they are in RRC_CONNECTED. Reception resources provided in broadcast signalling will be used in RRC-CONNECTED as well.
- When a remote UE moves from in-coverage to out of coverage Sidelink Communication resources (i.e. Mode 1 resource, Exception pool, pre-configured resource pool) for ProSe UE-to-Network Relay Operation. FFS if additional optimization to minimize interruption when moving from out-of-coverage to in-coverage are needed and whether T300 is needed.
- Communication resource pool for ProSe UE-to-Network remote UE is the same as the pool for other PS ProSe communication [CB for relay UE based on agreement on whether the relay UE can be in idle mode].
- How and if we need to independently control UE-to-Network relay communication and group communication is FFS and depends on other discussions in other WGs.
- The “Uu link quality Threshold for remote UEs” is provided in SIB19, and can be used in both RRC_IDLE and RRC_CONNECTED by Remote UE to transmit discovery solicitation message if the Uu link quality at the UE is below this threshold.
    - If SIB19 provides Relay Discovery transmission resource, then an RRC_IDLE Remote UE receiving group communication can use it to transmit discovery solicitation message once the configured threshold is reached.
    - If SIB19 does not provide Relay discovery transmission resources, then once the configured threshold is reached, an RRC_IDLE Remote UE enters into RRC_CONNECTED and sends SidelinkUEInformation message to request transmit resources.
    - If a Remote UE is already in RRC_CONNECTED then once the configured threshold is satisfied, it sends SidelinkUEInformation message to request transmit resources.

R2-154264 Discussion on remaining issues of relay discoveryShenzhen Coolpad Technologies discussion
R2-154302 Further considerations on relay UE initiation and release process SHARP Corporation discussion
R2-154441 Behaviour of the UE-to-Network relay LG Electronics Francediscussion
R2-154543 Remaining issues for ProSe UE-to-Network relay procedure Huawei, HiSilicon discussion
R2-154677 Remaining issues of initiation of ProSe UE-to-Network Relays Kyocera discussion
Above 5 Tdocs not treated

7.5.1.2 Relay UE selection/re-selection

Including output of email discussion [91#31][LTE/D2D] Relay selection and reselection (Qualcomm)

Selection/reselection terminology and detailed criteria to select a new relay and whether/how to perform the ranking of relays. Is Uu link quality used for selection/reselection purposes?

Discovery ID and interaction with higher layers

R2-154796 Report of email discussion [91#31][LTE/D2D] Relay selection and reselection Qualcomm report
Proposal 3: Layer 3 filtering of PC5 measurement and PC5 measurement based ranking is specified at AS layer.

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Proposal 4: It is not required to define which layer takes final decision to select a relay. There will be suitability criterion at AS layer and at upper layer; both of these criterion should be satisfied to select a relay

- LG wonders which approach is simplest. If we don't specify anything then specification management becomes difficult. Qualcomm thinks that we specify everything we will have to do more work.
- Intel thinks that the final decisions should be left higher layers. QC wonders what is the advantage of specifying.
- LG thinks we should notify CT1 and SA2 of this decision.

Proposal 5: Following definition of relay (re)selection is defined in RAN2 specification:
Relay Selection: Process of identifying a potential UE-to-NW relay, which can be used for connectivity service (e.g. to communicate with a PDN).
Relay Reselection: Process of changing previously selected UE-to-NW relay and identifying potential new UE-to-NW relay, which can be used for connectivity service (e.g. to communicate with a PDN).

Proposal 6: Uu (of Relay UE) signal strength is not considered for relay selection/reselection.

- Ericsson would like to see the Uu link quality being used in the selection processes.

Proposal 7: Select the UE-to-Network Relay which has the best link quality on PC5.

- Qualcomm clarifies that the ranking is based on link quality of PC5. ZTE thinks that there is a case where the UE can select any relay before finding all of them, especially for urgent scenarios. Samsung is not sure why we should specify exactly how the UE selects, of course UE implementation can select best if it wants to.

Proposal 8: AS layer triggers relay reselection when PC5 signal strength of current relay is below configured (same threshold as agreed in RAN2#91 for suitable relay) signal strength threshold.

- ZTE wonders how we can continue measuring the PC5 link quality. Qualcomm thinks that upper layers can continue transmitting the discovery message and using the communication is not a good idea. ZTE thinks that in case of Model A then we need have an expectation that higher layers will continue discovery and in Model B the UE has to continue sending solicitation messages. Huawei and LG think that the relay UE has to be continuously transmitting the discovery message. Qualcomm thinks that relying only on the relay UE to send the discovery messages is not sufficient. The remote UE may need to send solicitation messages for reselection purposes. Panasonic would like SA2 to confirm that this is possible and how often the discovery messages will be transmitted. QC doesn't think that a confirmation is needed. LG thinks that we should also add RAN4.
- LG thinks that this is similar to SyncRef procedure. QC indicates that the procedure is slightly different.
- Huawei wonders if proposal 8 on it's on is enough as there may be ping pongs. QC thinks that ping pong is less of an issue since the UE is performing absolute measurements rather than connected. LG agrees with Huawei and this was a similar problem with SyncRef.
- Intel wonders if the UE triggers measurements or reselections. Qualcomm's understanding is that it is reselection.

Proposal 9: Discuss if a Hysteresis (or offset) is required on top of option 2.

=> Noted

R2-154918 Report of email discussion [91#31][LTE/D2D] Relay selection and reselection Qualcomm report Rel-13 LTE_eD2D_Prox-Core

=> revision including ITL input

[CB]

R2-154571 Relay selection and reselection details LG Electronics Francediscussion Late

- ZTE thinks that they would prefer to only do cell reselection if the relay UE is below a threshold. Ericsson would like the hysteris.
- Qualcomm wonders whether this is a timer or an offset. ZTE thinks it is both similar to cell reselection.

=> Noted

Agreements:
- RSRP filtering only takes place across resources with the same ProSe Relay UE ID.
- ProSe Relay UE ID is available at upper layer and inter layer interaction is left to UE implementation.

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- Layer 3 filtering of PC5 measurement and PC5 measurement based ranking is specified at AS layer - It is not required to define which layer takes final decision to select a relay. There will be suitability criterion at AS layer and at upper layer; both of these criterion should be satisfied to select a relay - *:* Following definition of relay (re)selection is defined in RAN2 specification o Relay Selection: Process of identifying a potential UE-to-NW relay, which can be used for connectivity service (e.g. to communicate with a PDN). o Relay Reselection: Process of changing previously selected UE-to-NW relay and identifying potential new UE-to-NW relay, which can be used for connectivity service (e.g. to communicate with a PDN). - Uu (of Relay UE) signal strength is not considered for relay selection/reselection - The ranking of UE-to-Network Relays is based on the link quality on PC5, strongest to weakest. FFS whether the UE may select the UE-to-Network Relay which has the best link quality on PC5 and satisfies higher layer criteria - AS layer triggers relay reselection when PC5 signal strength of current relay is below configured (same threshold as agreed in RAN2#91 for suitable relay) signal strength threshold. A hysteresis will be added, a timer and/or an offset. Details will be finalized in stage 3 CR writing. - A remote UE may send UESidelinkInformation (for relay discovery and communication) to eNB only if the Uu link quality at the UE is below an optional network configured threshold

=> LS to SA2 and CT1
- Inform them of how relay selection/reselection works and the expectations from RAN2 point of view to enable correct operations of these procedures. Additionally, inform them that Uu quality of relay UE will not be used
- Notify SA2 on the agreement made on MAC PDU headers for one-to-one communications.

R2-154917 LS to SA2 on RAN2 agreements related to ProSe LG LS out from: RAN2 to: SA2, CT1, RAN3? Rel-13 LTE_eD2D_Prox-Core
[CB]

R2-154243 Uu Link quality of Remote UE PANASONIC R&D Center Germany discussion
revised to R2-154886
R2-154886 Uu Link quality of Remote UE PANASONIC R&D Center Germany, Qualcomm Incorporated discussion related to email discussion [91#31]
revision of R2-154243
A remote UE may send UESidelinkInformation (for relay discovery and communication) to eNB only if the Uu link quality at the UE is below an optional network configured threshold
R2-154150 Contents of radio layer information in Relay discovery messages Ericsson discussion
R2-154046 Consideration on relay (re-)selection and resource allocation CATT discussion
R2-154153 Filtering of sidelink measurements Ericsson discussion

R2-154160 Relay selection criteria for public safety discovery Ericsson discussion
R2-154307 Discussion on trigger condition for relay reselection FUJITSU LIMITED discussion
R2-154308 The remote UE access to relay UE served by one neighbor cell FUJITSU LIMITED discussion
R2-154443 Connection and communication with relay LG Electronics Francediscussion
R2-154695 Relay UE Selection and Reselection ZTE discussion
R2-154811 In-coverage discovery/selection of UE-to-Network relaysBlackBerry UK Limited discussion
Moved from 7.5.1
Above 11 Tdocs not treated

7.5.1.3 Connection establishment

AS involvement (UE and/or eNB) with NAS in deciding "when" to switch “allowed traffic” (as determined by higher layers) between Uu and PC5 (if any)

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R2-154158 Establishment and release of the PC5 link between the Relay UE and the Remote UE Ericsson discussion
=> Noted
Proposal 1 The Remote UE transmits a message (e.g. SidelinkUEInformation) to its serving eNB before initiating the establishment of the PC5 Layer-2 link to a Relay UE. The SidelinkUEInformation includes at least the Relay UE ID and an indication that that the link is to be used for UE-to-Network relaying as a Remote UE
- Qualcomm thinks that we agreed to this already. Ericsson shows that the intention was to clearly state that we have an indication and a relay UE ID. Samsung indicates that we agreed that the UE will indicate that the request is for one-to-one communication. Chair indicates that the one-to-one communication in the agreement was for relay, so we did agree it already.

=> This was already agreed and we just need to clarify it in the stage 2 CR.
Proposal 2 The eNB has the possibility to trigger the release of the PC5 link between the Relay UE and the Remote UE.
- LG thinks that the existing mechanisms allow the eNB to release the configuration. Is there something more than that. Ericsson thinks that with today's mechanisms the network can remove communication resources but it would remove the resources for all UEs connected to the relay. Samsung would like to understand the need. Nokia Net thinks that this is an optimization.

=> The understanding is that today the eNB cannot release out-of-coverage remote UEs one by one
Proposal 3 The Relay UE transmits a message (e.g. SidelinkUEInformation) to its serving eNB upon a release of the PC5 Layer-2 link between the Relay UE and a Remote UE. The SidelinkUEInformation includes at least the ProSe UE ID of the Remote UE.
- Qualcomm's understanding is that today this is UE behaviour, when the UE no longer wants to do communication it will send the communication. LG thinks that whenever there is a delta of configuration the UE can indicate the change of information. Ericsson would like to link this triggers to the relay operation.

=> The understanding is that with existing Rel-12 behaviour, when a remote UE (i.e. a destination ID) is no longer connected to the relay UE (i.e. the UE no longer needs to communicate with that destination ID), the relay UE will trigger a SidelinkUEinformation with the new list.

R2-154381 Open aspects of UE-to-Network relay connection establishment Intel Corporation discussion
R2-154242 Interruption in PS CommunicationPANASONIC R&D Center Germany discussion
R2-154444 When to switch data path LG Electronics Francediscussion
R2-154155 Mobility aspects of UE-to-Network RelayingEricsson discussion
Moved from 7.5.1.3
Above 4 Tdocs not treated

7.5.1.4 Other

Resource allocation: what resources are used for communication

One-to-one communication and need for L2 ID collision

Other open issues

MAC PDU addressing

R2-154061 MAC PDU Addressing for Communication with UE-to-Network Relay Samsung Electronics Co., Ltddiscussion
=> Noted
- LG, Ericsson, Qualcomm supports this. ZTE wonders if we are the right group to decide this and Samsung indicates that SA2 thinks that we are the right group.
- Huawei wonders whether 24bits are sufficient to make it unique. Samsung this that with 24 bits we can use the same MAC header format.

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- Intel thinks that the requirement from SA2 that the UE ID is locally unique. Qualcomm thinks that there is a good probability that it is locally unique.

Agreements:

For one to one communication,

- Unicast addresses i.e. Source UE ID and Destination UE ID are set in SRC and DST fields respectively in MAC header. RAN2 makes an initial assumption that the ID remains 24 bits (16MSBs of destination UE ID is set in the DST field in MAC header and 8 LSBs of destination UE ID are included in scheduling control information). FFS if more bits are required.
- A new MAC PDU format version number indicates that unicast addresses are set in SRC and DST fields.

R2-154545 L2 impacts of ProSe one-to-one communication Huawei, HiSilicon discussion
R2-154382 Support of one-to-one communication Intel Corporation discussion
Above 2 Tdocs not treated

Collision

R2-154055 Considerations on Layer-2 ID collision CATT discussion
R2-154319 ProSe ID collisionLG Electronics Inc. discussion
R2-154696 Considerations on the ProSe Layer-2 ID conflict issue ZTE discussion
R2-154721 Layer-2 ID conflict issues for ProSe one-to-one communication ETRI discussion
Above 4 Tdocs not treated

Resource Allocation aspects

R2-154063 Resource Allocation Aspects for UE-to-Network Relay Samsung Electronics Co., Ltd discussion
R2-154161 Handling collisions between communication and discovery resources Ericsson discussion
R2-154245 Missing Packet due to Half-duplex in PC5 CATT discussion
R2-154269 Further Discussion on Resource Allocation Issues and Way Forward for Release 13 Shenzhen Coolpad Technologies discussion
R2-154309 Resource allocation for the remote UE and the relay UE FUJITSU LIMITED discussion
Above 5 Tdocs not treated

Other

R2-154542 Discussion on Inter-frequency UE-to-Network relay Huawei, HiSilicon discussion
R2-154064 Sidelink BSR for Unicast Samsung Electronics Co., Ltd discussion
R2-154301 Public safety perspectives on GCSE_LTE latency requirements for evaluating UE-Network Relay solutions U.S. Department of Commerce, Institute for Information Industry (III) discussion
R2-154572 Sync Reference UE selection upon Relay Selection LG Electronics Francediscussion
late
R2-154576 Multiple SA transmissions LG Electronics Francediscussion
late
R2-154678 Consideration of bearer mapping for ProSe UE-to-Network Relays Kyocera discussion
Above 6 Tdocs not treated

7.5.2 ProSe discovery in partial- and outside network coverage

RAN2 aspects of supporting out-of-coverage discovery

R2-154056 RAN2 Aspects of ProSe Discovery in Partial & OOC Samsung Electronics Co., Ltd discussion
=> Noted
Proposal 3: Resource pool configuration for PS discovery should be included into pre-configuration information.

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Proposal 4: If the UE does not detect an E-UTRA cell on the PS ProSe Carrier, the UE can use PS ProSe Carrier discovery resources preconfigured in the UICC or ME for out of coverage PS Discovery.

Proposal 5: UE can use PS ProSe Carrier discovery resources preconfigured in the UICC or ME if valid in the operating region. Higher layers check validity of the PS ProSe Carrier in the operating region.

Proposal 6: Upper layer informs whether the sidelink direct discovery announcements is related to PS discovery or non-PS discovery when it configures RRC to transmit sidelink direct discovery announcements.

R2-154383 Support of public safety discovery in OOC Intel Corporation discussion
=> Noted

Agreements:
- Resource pool configuration for PS discovery should be included into pre-configuration information
- If the S-criteria on the PS ProSe Carrier is not met, the UE can use PS ProSe Carrier discovery resources preconfigured in the UICC or ME for out of coverage PS Discovery
- UE can use PS ProSe Carrier discovery resources preconfigured in the UICC or ME if valid in the operating region. Higher layers check validity of the PS ProSe Carrier in the operating region
- Upper layer informs whether the sidelink direct discovery announcements is related to PS discovery or non-PS discovery when it configures RRC to transmit sidelink direct discovery announcements
- Both broadcast and dedicated RRC signalling can be used for indicating Behaviour 1 or Behaviour 2

=> LS to CT1/SA2 – LG
- Inform groups about the pre-configuration of discovery resources of OoC

R2-154952 Draft LS on out-of-coverage discovery LGLS out from: RAN2 to: SA2 and CT1 Rel-13 LTE_eD2D_Prox-Core
[CB]

=> LS to RAN1/RAN3/RAN4 on inter-PLMN and inter-Frequency discovery – Qualcomm
- Inform with no actions

R2-154951 Draft LS on inter-frequency and inter-PLMN discovery Qualcom LS out
from RAN2: to: RAN1, RAN3, RAN4 Rel-13 LTE_eD2D_Prox-Core
[CB]

R2-154048 Discussion on ProSe Discovery in Partial and Outside Network Coverage CATT discussion
R2-154151 Differentiation between PS discovery and non-PS discovery Ericsson discussion
R2-154152 Direct Discovery on non-PCell carriers Ericsson discussion
R2-154157 Out of coverage discovery Ericsson discussion
R2-154574 Discovery out of coverage LG Electronics Francediscussion
late; revised to R2-154883
R2-154883 Discovery out of coverage LG Electronics Francediscussion
R2-154697 RAN2 aspects of supporting out-of-coverage discovery ZTE discussion
Above 7 Tdoc not treated
R2-154760 Partial and Out of Coverage Discovery Qualcomm Incorporated discussion
=> Noted

7.5.3 ProSe discovery for inter-carrier and inter-PLMN

Details of UL subframe gap request report and triggers

Inter frequency/inter-PLMN remaining issues
R2-154059 Remaining Issues: Inter Carrier Discovery Samsung Electronics Co., Ltd discussion

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Proposal 1: RAN 2 should discuss and confirm whether option 1 is the expected UE behavior or not for inter carrier commercial discovery if the SIB 19 is not broadcasted by serving cell. If not, then is the UE allowed to perform inter-carrier discovery transmission using option 2?

- Nokia Net thinks that for commercial case if SIB19 is not present the UE is not allowed to perform discover tx and for PS the UE can perform discovery tx on the pre-configured. Ericsson agrees on this behaviour but wonders if Samsung would like to perform re-selection. Samsung would just like to clarify what happens when there is no SIB19. Ericsson is not sure how the UE would know where to search.
- LG doesn't think that any additional complexity is introduced with option 2 and we should consider with option. Qualcomm doesn't thinks that option 2 is a good option as the UE doesn't know what frequency to read from. Huawei shares Qualcomm's view and doesn't thinks we should solve the case where the network doesn't know the carriers.
- ZTE is not sure if we can prevent a UE in idle mode from doing this behaviour, but thinks that we should have a simple behaviour. Nokia Net thinks that if the UE wants to transmit on the other carrier the UE can just reselect.
- Huawei and Ericsson have an understanding that for reception the UE can only perform reception on the carriers that are broadcasted. Huawei thinks that if the network doesn't support the feature then the UE shouldn't use that feature. Samsung doesn't see why we prevent the UE to use the feature in another PLMN. Samsung and LG thinks that for monitoring purposes the UE prioritizes the SIB19 frequencies. Panasonic clarifies that in Rel-12 we cannot stop the UE from receiving.
- Ericsson would like to understand the network impact if we allow the UE to transmit and whether the UE can still request gaps. Panasonic thinks that the UE will not request gaps but if it can create gaps on its own it can. Qualcomm thinks that the network can still control the gaps even if the UE requests them.
- TIM thinks that reception has less impacts to the system then transmitting and the serving PLMN should control this behaviour. Samsung wonders why this is an issue if you have been authorized by the network. TIM would like to be aware of what the UE is doing and to coordinate the UEs behaviour. Huawei and Ericsson don't know the network can control the UE from transmitting in that carrier. LG thinks that the other cell will broadcast this information.
- Intel thinks that we shouldn't allow as it creates interference

Proposal 2: RAN 2 should discuss and confirm whether following is the expected UE behavior or not for inter carrier PS discovery:

– *If SIB 19 is not broadcasted by the serving cell then UE first detects a cell meeting S criterion on PS carrier, reads SIB 19 transmitted by the detected cell on PS carrier to acquire the discovery resource configuration for discovery transmissions and then transmit using the acquired resources.*

- Qualcomm doesn't think that the should UE first detect a cell meeting S criterion on PS carrier. Samsung thinks that the UE should still detect whether it is in coverage or out-of-coverage. Panasonic thinks that we need to understand if the UE should read SIB2.

Proposal 3: UE detects a cell meeting S criterion on other carrier, and if a cell is detected then only UE uses the discovery resources of other carrier signaled by the serving eNB.

=> Noted

R2-154757 Inter Frequency and Inter PLMN Discovery Qualcomm Incorporated discussion

Discussion on resource configuration

- LG and Samsung think that for synchronous deployments it is simple for the network to provide the Resources. If the SIB19 size is too large the network has to option to not provide the resources and the UE can read SIB19 on the other cell.
- Huawei thinks that the network should be able to provide the resources for the other carrier that doesn't have cells.
- Qualcomm understands that there can be scenarios where it is useful to provide the information so maybe we can allow for both. LG wonders where the UE gets the information from. Qualcomm clarifies that the UE can acquire the resource information from SIB19 of the other carrier when the valuetag changes.
- ZTE is concerned that the value tag of other cells in the other frequencies will trigger the SIB19 update of the serving cell and all the UEs in the cells have to reacquire all SIBs. Qualcomm indicates that the change frequency will be the same even if the resources are broadcasted in the serving cell.

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- Huawei thinks that it doesn't have to be a value tag but just an indication for the UE to go read the other frequency.
- Qualcomm would like to understand if companies are concerned with the size of the SIB19.
- ZTE thinks that maybe we can indicate the cell id only.
- TIM doesn't think that there is a big problem with configuring resources for D2D and would like to have the flexibility and doesn't have a concern on the SIB19 size.
- Qualcomm would like to ensure that if we provide a set of resources we should provide the cell IDs in a separate structure. Panasonic doesn't understand how the cell ID would help the network. TIM doesn't think that all cells will have the same configuration.
- Samsung's understanding is that discovery resources in SIB19 is only for tx discovery resources. Qualcomm thinks that it was for both. Nokia Net wonders if we need to provide the cell id for the reception case. Qualcomm confirms that in Rel-12 we provided cell id for the neighbour reception pool.

=> Both rx/tx resource configurations are provided in SIB19 according to previous agreements

Serving cell provides Type 2B resources for discovery transmission on other frequency by indicating a pair of discovery subframe and PRB index as defined for Release 12 (i.e., SL-TF-IndexPairList) and the cell id. The resource pair should be provided with respect to the cell on the target frequency for discovery.

- Samsung thinks we should just use the same structure that we use today. Ericsson wonders if the intention here is to support type 2B for inter-frequency/PLMN case. Qualcomm indicates that this was already agreed.

=> Noted

R2-154546 Resource Configuration for Inter-carrier Discovery transmission Huawei, HiSilicon discussion

Proposal 3: The UE can inform the eNB which cells are detected on the frequencies configured in SIB-19. The serving eNB could configure via dedicated RRC signaling to the connected UEs with discovery TX resource pool (Type 1) or dedicated discovery TX resources (Type 2), or alternatively serving eNB could configure a carrier list to indicate to the connected UE to read resource pools from SIB19 of the configured carriers.

Proposal 4: If there are cells on the other carrier, besides the resource configuration information (resource pools or dedicated resources), the serving eNB should indicate the carrier frequency and cell identity as well in the discovery resource configuration message.

Proposal 5: If there is no cell on the other carrier (public safety ProSe carrier), the serving eNB may indicate discovery resources and the carrier frequency to the UE via RRC dedicated signaling.

- Samsung, Nokia Net, and Qualcomm think that in this case the UE should use the pre-configuration

Proposal6: RAN2 is kindly asked to discuss how to handle the discovery transmission resource configuration change in SIB19 of inter-carrier cells.

- Panasonic and ZTE wonder why we need to do something. Qualcomm indicates that based on the agreement we made today this is no longer a problem. TIM thinks that this proposal is addressing the issue where there is no coordination.
- Huawei clarifies that the issue is for the case where the network only broadcasts the list of frequencies and doesn't provide the resources. This mechanism would prevent the UE from having to always check the SIB of the carrier for system information change. Samsung thinks that we already discussed this when Qualcomm presented their paper.

=> No support

=> Noted

R2-154598 Inter-PLMN coordination for discovery transmission Telecom Italia, Ericsson discussion

- Panasonic thinks this is a smart behaviour but wonders why we need to specify this and why can't the network use special UEs to get this information. Also it seems complex and it would require a UE to move to connected mode to report. TIM thinks we can design a simple solution and the UE doesn't have to move to connected. This is similar to SON. Panasonis is concerned as SON and ANR were very features on their own.
- TIM doesn't think that a test UE can perform this as it would always have to be there and going around.

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- Qualcomm thinks that we can maybe discuss the connected mode case as it is the same as gaps. TIM's intention was to provide this information in connected mode and not wake up the UEs in idle mode just for this purpose. QC's understanding is that the UE has to store the information in idle mode. Ericsson thinks this may not necessary a requirement for idle mode.
- LG has some concerns with this solutions and how the UE handles the SI updates. Huawei thinks that anyways the UE will monitor the other carrier and can update the network. TIM thinks that we can have smart implementation to spread the burden across different UEs.
- Qualcomm wonders if this is applicable only for UEs that are interested in inter-carrier and inter-freq.
- Samsung and Panasonic thinks this is strange. Ericsson and TIM indicate that the alternative solution is that all UEs read SIB19.
- Qualcomm thinks that we already have the support in the UE of SIB19 reading and the only thing missing is the report, so maybe we can compromise on having this in the connected mode. TIM thinks that we can do only connected mode and see how the gap report looks like.
- Panasonic is concerned with what happens with a rogue UE reporting false information.

=> Noted

Agreements:
- If SIB 19 is not broadcasted by the serving cell the UE shall not enter connected mode on the serving cell to perform discovery or to request gaps or resources.
- In SIB19 can provide discovery resources for multiple cells for an associated frequency. The cell id of the cells associated with a tx configuration will also be provided. For rx configuration a similar structure to rel-12 rx pool will be used.
- For public safety, if the UE is out-of-coverage, it only uses the pre-configured resources

FFS
- If SIB 19 is not broadcasted by the serving cell, for commercial services, may perform inter carrier discovery transmission on a carrier/PLMN that is authorized by the network, as long as ongoing Uu operations is not affected. The understanding is that UE should not request gaps in this cases.
- For PS, if SIB 19 is not broadcasted by the serving cell reads SIB 19 transmitted by the detected cell on PS carrier to acquire the discovery resource configuration for discovery transmissions.

✉ **[D2D/Inter-carrier/PLMN] – Qualcomm**
- Discuss the criteria the UE should meet in order be able to transmit on the other PS and commercial carrier (e.g. whether S criterion should be met)

R2-154077 the issues on the SIB18 change of the iner-carrier Beijing Xinwei Telecom Techn. discussion
R2-154377 Carrier Prioritization for Type 1 Inter-Carrier Discovery Transmission ITRI discussion
R2-154384 Provision of discovery resource configuration for non-serving carrier Intel Corporation discussion
R2-154565 Inter-frequency discovery LG Electronics Francediscussion late
R2-154573 Measurement and selection of reference cell for discovery LG Electronics Francediscussion late
R2-154679 Possible issue on access restriction of intra-PLMN and coordinated inter-PLMN cells Kyocera discussion
Above 6 Tdoc not treated

Gaps
R2-154148 Sidelink gap request for direct discovery Nokia Networks discussion

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- Qualcomm wonders if the gap is per carrier, discovery is performed per carrier on a per active cell. Nokia's understanding is that we already agreed on a per UE basis. Qualcomm's understanding is different, the gaps can be per UE, but the UE can report per carrier.
- Ericsson thinks that we don't need all this cases. Samsung agrees.
- ZTE thinks that combining the different pools together can be quite complicated. Ericsson thinks that we should have a simple design.
- Huawei wonders if we allow the UE to transmit on multiple carriers. Qualcomm thinks that we should prioritize the single carrier tx. Intel thinks that one time pattern in time domain is simple. Samsung wonders if we have one gap why can't we rely on DRX?
- Qualcomm thinks that the gaps should be reported per activated cell.

=> Noted

R2-154156 On D2D gaps Ericsson discussion

- ZTE wonders if the reception can happen in multiple frequencies.
-

Proposal 2 Necessary condition to trigger a D2D gap request is that the UE does not have an available RX/TX chain to be allocated to the ProSe discovery carrier.

- Qualcomm wonders how we would capture it in stage 3.

Discussions on 4148 and 4156

What is reported in the gap request

Reception

Option 1) reception gaps *are not performed if new data UL transmissions or HARQ retransmissions are expected during the discovery reception gap (including interruption subframes).*

Option 2) The UE during reception gaps doesn't monitor PDCCH and does not perform any DL Uu operation.

- Ericsson thinks that Option 2 as long as the UE fulfils the measurement requirements. ZTE thinks that the network should take measurements requirements into account.

Transmission gap request

Option 1) UE sends the full transmission pool and the eNB configures the UE with a gap (the gap consists of a set of subframes in which the UE can transmits)

Option 2) The UE only sends the subframes which it choses for transmission

- Panasonic thinks that if the UE does option 2 then there will be a lot of signalling overhead. Huawei doesn't think that it is problem if the UE signals the full pool and the eNB selects.

When to trigger a gap

UE behaviour during transmission gap

Option 1) the UE prioritize the Uu over the gap when it can

Option 2) the UE ignores any Uu UL transmission when a conflict occurs

- Qualcomm wonders what gap means if this is Rel-12 behaviour. Ericsson, the gaps will allow the eNB to give UE opportunities to transmit, but gives the flexibility to sometimes override this decision. With Option 2 the eNB cannot schedule the UE.
- Intel thinks that there is no change to Rel-12 behaviour.
- CATT with Option 2 the eNB can always de-configure the gap.
- LG, Intel, QC, Panasonic prefers Option 2.
- Huawei thinks that the gap is for information to the eNB. Qualcomm doesn't think this is for information only. Ericsson thinks for reception they agree but for UL that's not the case.
- Intel thinks Option 2 is simpler but Huawei wants to make sure that if there is something urgent on Uu we should prioritize Uu.
- LG wonders if option 1 works.
- LG thinks that we should have a single gap for UL and DL and we shouldn't specify different behaviour for tx/rx. Huawei thinks we should have separate gaps.

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- ZTE also prefers option 1 as it seems more reasonable to control.
- Qualcomm wonders what happens with PUCCH and SRS. Ericsson is ready to make a compromise and skip PUCCH and SRS.

Compromise suggestion?:
During transmission gaps: the UE prioritise the Uu over the gap (except PUCCH and SRS)

In the gap request the UE reports the full tx transmission pool (the eNB can configure gaps based on this information)

Agreements:
- The UE during gaps intended for reception is not expected to monitor any DL channels (it is RAN2's understanding that the UE still needs to fulfil measurement requirements)
- The eNB can deconfigure a configured transmission/reception gap

✉ **[LTE/D2D – Gaps] – Discussion on gap configuration – Qualcomm**
- Discuss and conclude on UE behaviour during tx gaps, the gaps request and configuration format for rx/tx, gap request triggers and whether the request is per active cell.
- Deadline Nov. 4th

R2-154047 Consideration on gap configuration and UE capabilities CATT discussion
R2-154057 Remaining Issues: Gap for Discovery Reception Samsung Electronics Co., Ltd discussion
R2-154058 Remaining Issues: Gap for Discovery Transmission Samsung Electronics Co., Ltd discussion
R2-154060 Handling Collisions between Discovery & Communication Samsung Electronics Co., Ltd discussion
R2-154547 Remaining issues for sidelink gap Huawei, HiSilicon discussion
R2-154569 Details of sidelink gap LG Electronics France discussion
late
R2-154680 Further details of sidelink gap for direct discovery Kyocera discussion
R2-154698 On gap request report and trigger ZTE discussion
Above 8 Tdocs not treated
Withdrawn:
R2-154053 DL measurement and synchronization reference cell CATT discussion

7.5.4 Group priorities for ProSe communication

Mapping between the logical channel priority and LCG and stage 3 details of BSR reporting

Solutions to address prioritization in case of autonomous resource selection (e.g. solutions other than static one-to-one association between priorities and resource pools).

Need/requirement for pre-emption.

Are multiple transmissions to different destination IDs allowed within one SA period?

Incoming LS
R2-154005 LS on eD2D ProSe Per Packet Priority (R1-154876; contact: Qualcomm) RAN1 LS in to: RAN2 Rel-13 LTE_eD2D_Prox-Core
=> Noted

PPP related open issues

R2-154325 PPP and LCG mapping LG Electronics Inc. discussion
Option 1. Fixed mapping – the mapping between PPP and LCG is fixed in the specification. All ProSe UEs have the same mapping.
Option 2. Configurable mapping – the mapping between PPP and LCG is configurable by the eNB via RRC signalling
Option 3. Configurable by the UE

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- Ericsson, Nokia Net prefers configurable. Panasonic, ITL prefers fixed mapping as the eNB doesn't have a knowledge. Huawei, QC thinks that UE can report the priorities to the eNB and the eNB can configure.
- CATT would prefer option 3. Xiewei prefers fixed mapping. US government thinks it needs to be configurable and there is no clear way on how we will use this.
- LG is concerned with eNB implementation complexity.
- Panasonic wonders how the UE performs this mapping. Qualcomm doesn't think that the UE needs to report anything. Panasonic wonders if the eNB has to give the same mapping to all UEs. Ericsson thinks that this can be left to eNB implementation. LG thinks that to make it configurable the UE should report some priority. ITL thinks that UE should decide the mapping. QC thinks it is too complicated to report.
- ALU wonders whether it is dedicated or broadcast. Ericsson thinks that is should be dedicated signalling. ALU would like to ensure that the mapping is sent once.

=> Noted

R2-154799 Priority handling for Sidelink Direct Communication Qualcomm Incorporated, ZTE, Samsung
discussion

Proposal 1: There is PPPP associated with each logical channel.

- Huawei wonders what is the relationship between PPPP and priority. They want to ensure that we don't want to define a new parameter.

Proposal 2: Multiple logical channels can have same PPPP associated with them.

- Huawei wonders why we have multiple logical channels with the same priority. Qualcomm thinks that we can have different data applications or streams with the same PPPP. Huawei thinks that for the source/destination pairs then this is true.
- Ericsson thinks that since the UE can create logical channels based on implementation then we should not restrict the UE. LG doesn't want this restriction either.

Proposal 3: LCID and PPPP mapping is neither defined nor configured. It is up to UE implementation to perform any association.

Proposal 5: There is no need to define any mapping for LCID to LCG ID mapping. UE maps those LCIDs of a destination to LCG ID which has same associated PPPP.

Proposal 6: As per SA3 decision LCID 0 to 2 are used for PC5-SP messages. Remaining LCIDs can be used by UE for user data for one-to-one communication (including eMBMS relay).

- LG thinks that SA3 shouldn't have made such a decision. Nokia Net wonders whether this is already captured in the spec. Qualcomm confirms it is in an agreed CR.
- MAC rapporteur indicates that logical channels 1-2 are currently occupied. Qualcomm thinks that the actual number is not important.
- LG doesn't thinks we should tell SA3 since we didn't get an official LS.

Proposal 7: Irrespective of destination ID, BS of LCGID associated with higher PPPP are first incorporated followed by buffer status of LCG IDs associated with lower PPPPs in Sidelink BSR.

- Panasonic thinks that is better to send buffer status of the highest priority group. Panasonic thinks the BSR should follow the LCP procedure. LG agrees to the proposal. Intel also agrees and it is important to report the highest priorities first especially if we support multiple grants to be transmitted. CATT agree with BSR.
- Huawei thinks that this is an issue only for truncated BSR.
- Ericsson thinks that the high priority information makes it first to the eNB.
- Qualcomm clarifies that the reporting structure will remain the same as Rel-12 BSR.

=> Noted

Agreements:

- There is priority associated with each logical channel. The logical channel priority is the PPPP.
- Multiple logical channels can have same priority associated with them.
- LCID and PPPP mapping is neither defined nor configured. It is up to UE implementation to perform any association.
- The mapping between priority and LCG per UE is configurable by the eNB via RRC dedicated signalling. FFS if the UE reports any priority information to the eNB.
- There is no need to define any mapping for LCID to LCG ID mapping.

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UE maps those LCIDs of a destination to LCG ID which has same associated priority.
- We will send an LS to SA3
- For truncated BSR, irrespective of destination ID, BS of LCGID associated with higher priority are first incorporated followed by buffer status of LCG IDs associated with lower priority in Sidelink BSR. For full BSR the UE shall follow the same rule.
- The same BSR structure as Rel-12 will be used

R2-154916 LS to SA3 – Ericsson

- indicating that logical channel value 1 and 2 and currently reserved and cannot be used for PC5-S signalling. We will suggest a value from the MAC rapporteur.
- Ask them how they are using the specific value

[CB] for Friday
=> Companies can investigate if there are any additional RAN2 impacts resulting from SA3's solution

R2-154575 Prioritization of PC5-S LG Electronics Francediscussion
late
R2-154154 Management of Sidelink logical channel groups Ericsson discussion
R2-154548 Priority handling based on ProSe Per Packet Priority Huawei, HiSilicon discussion
R2-154050 Mapping between PPP and LCG ID CATT discussion
R2-154062 Priority Handling for D2D Communication Samsung Electronics Co., Ltd discussion
R2-154244 Buffer status reporting/priority handling for ProSe communication PANASONIC R&D Center Germany discussion
R2-154247 Provisioning ProSe Priority-Per Packet information to UE-to-network Relay UE PANASONIC R&D Center Germany discussion
R2-154270 Discussion on Issues of Priority Handling for ProSe Communication Shenzhen Coolpad Technologies discussion
Above 8 Tdocs not treated

Relay UE and PPP
R2-154544 Priority handling for UE-to-Network relay Huawei, HiSilicon discussion
R2-154317 Providing PPP information to Relay UE LG Electronics Inc. discussion
R2-154816 Mapping between logical channel priority and LCG and SL BSR reporting Nokia Networks discussion
Above 3 Tdocs not treated

Sidelink BSR
R2-154321 Construction of SL BSR with ProSe Priority LG Electronics Inc. discussion
R2-154052 Construction of the Sidelink BSR MAC CE CATT discussion
R2-154323 Considerations on SL BSR for relay UE Innovative Technology Lab Co. discussion
Above 3 Tdocs not treated

Priority for mode 2
R2-154051 Priorization for mode 2 resource allocation CATT discussion
R2-154300 Realizing off-network MCPTT priority and associated pre-emption on PC5 U.S. Department of Commerce discussion
Above 2 Tdocs not treated
R2-154385 Priority handling aspects for ProSe communication Intel Corporation discussion

Discussion on 4799
Proposal 8: There can be up to 8 mode 2 transmission pools, each pool will have priority (PPPP) associated with it.

- Intel would like to understand the motivation of 8 tx pool when we only have 4 LCG and we map all the priorities within this 4 LCG. Intel thinks that this is not forward compatible and it is not scalable with future increase of priorities. LG supports to extend to 8 pool.

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- ZTE thinks that we can configure up to 8 but we can configure less than 8 and then you can have one to many mapping.
- Intel thinks that there are other options like using different T-RPT and partitioning. Qualcomm thinks that it may increase the signalling complexity.
- Nokia Net thinks that we if we create 8 pools and we don't have users with all those priorities, then we are wasting resources.
- Huawei wonders how many receive pools you need to configure.
- US gov supports configuring up to 8 pools but how to use this pools we should be flexible and how the pool will be used to provide priority is important.
- Nokia Net thinks that RAN1 should have made the decision for the number of pools. Ericsson thinks that we are only suggesting to have 8 pools but there is flexibility to have less pool.

Proposal 9: Based on PPPP, UE selects a particular transmission pool which has an associated priority equal or lower than PPPP of the packet for transmission of the packet.

- Ericsson wonders if we need this rule anymore as a pool can have multiple priorities configured. ZTE wonders if a PPPP can be mapped to more than one pool.
- Huawei wonders how we can select amongst pool with the same priority. Qualcomm thinks that it can be left to UE implementation.
- Huawei wonders what happens if a UE implementation always selects the same pool.

Proposal 10: Even if number of Tx pools are increased to 8, number of Tx and Rx pools can still be 20, so that pool information can still fit into SIB18.

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Whether multiple transmission to different destination IDs within the same pool?

-

Proposal 14: Multiple transmissions to different destination IDs in different resource pools are allowed subject to SC-FDM constraint.

- Panasonic wonders if subject to SC-FDM constrains means that the UE can skip one of the colliding transmission. Qualcomm agrees.
- LG wonders if multiple transmissions can be allowed for Mode 1. Qualcomm thinks that this proposal is for mode 2 only. Ericsson thinks that if we allow it for Mode 2 we should also allow it for mode 1. LG indicates that currently only one SL grant is provided in mode 1. Intel thinks that for relay case if multiple transmissions are not allowed for the relay UE then we will have a problem. Panasonic also thinks that there may be some complexity. US gov. thinks that this is an important issue as we need to meet the requirements.
- Ericsson wonders whether this is really need.
- Ericsson wonders why it is in different pools. Qualcomm thinks you can allow this in the same pool. Ericsson thinks that if we are trying to address the relay use case than these transmissions would occur in the same pool.

Agreements:
- There can be up to 8 mode 2 transmission pools, each pool will have a list of priorities (i.e. PPPP) associated with it. The number of pools can be configurable. A priority can be mapped to multiple pools.
- UE selects a particular transmission pool in which one of the associated priorities is equal to the highest logical channel priority in the MAC PDU. It is up to UE implementation how the UE select amongst multiple allowed pools.

Working assumption:
Multiple transmissions within overlapping SC periods to different destination IDs are allowed subject to SC-FDM constraint. FFS on how this is achieved and implications for Mode 1 and Mode 2.

R2-154241	Impacts of MCPTT Floor Control and pre-emption on AS	PANASONIC R&D Center Germany	discussion
R2-154159	Providing ProSe priority	Ericsson	discussion
R2-154246	Resource pool selection for the autonomous resource allocation mode	PANASONIC R&D Center Germany	discussion
R2-154580	Support of pre-emption	LG Electronics France	discussion late
R2-154723	Considerations on ProSe Per Packet Priority	ETRI	discussion
R2-154775	Priority handling for D2D Communication Mode 2	INTERDIGITAL COMMUNICATIONS	other
R2-154836	Remaining issues on mapping from per packet priority to resource pools	SHARP	discussion

Above 7 Tdocs not treated

7.5.5 Other

MCPTT related, etc

7.9 WI: RAN enhancements for extended DRX in LTE

(LTE_extDRX-Core; leading WG: RAN2; started: Mar. 15; target: Dec. 15; WID: RP-150493)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session

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7.9.1 eDRX for idle mode

Including output of email discussion [91#32][LTE/eDRX] eDRX and H-SFN range (Intel)

Value range or eDRX in idle mode and H-SFN range

System information change impacts

Other idle mode impacts

R2-154294 Email discussion report on [91#32][LTE/eDRX] eDRX and H-SFN range Intel Corporation report
Late

Proposal 2 To discuss and define a H-SFN cycle between 10-12bits, i.e. maximum H-SFN range of 1024 SFN cycles (which corresponds from 2.91 hours, to 11.65 hours).

- Samsung thinks that a longer H-SFN cycle (17) may be desirable such that it is also applicable to NB-IoT. The battery life time should be 10 year. Intel understands the concerns but NB-IoT has different requirements and will need to be discussed.
- Nokia Net thinks 8 is agreeable
- Qualcomm thinks that we should be careful on the number of bits as we need to broadcast the value as well.
- Sierra wireless has a preference to have more bits for future proofness.
- Intel indicates that the majority of companies are fine with 10 bits.
- Huawei wonders what the requirements are on the range.
- Chair thinks that maximum value and number of bits can be revisited as a result of NB-IoT discussions and if there is a motivation to align with NB-IoT. Huawei thinks that we should put this in the agreement box and doesn't see what the big impact of this is.

Proposal 3 To define the maximum I-eDRX cycle of at least 43.69min (which is TI-eDRXmax = H-SFNmax/4 for H-SFNmax of 174.76min) and to discuss if maximum I-eDRX cycle is further extended to the same range than the maximum H-SFN (H-SFNmax).

- Nokia Net, Ericsson, and Huawei doesn't think we need to follow the legacy way of accommodating 4 cycles within a cycle. Ericsson indicates that this was created in Rel-8 to ensure that the maximum DRX cycle was 2.56s. Intel thinks that maybe we don't need 4 opportunities but depending on SA2 discussion. .
- InterDigital wonders why we are limiting the eDRX cycle to 43mins. Intel indicates that this was the majority of companies preferences.

Proposal 5:

- ZTE wonders what option c means, it doesn't work. Nokia agrees. Qualcomm indicates that the intention of Option c is to avoid the case where the UE reads SIB one all the time.
- Nokia Net indicates that the usual case will be that the eDRX value is larger than modification. Then we also have the problem of value tag rap award. Panasonic wonders when it happens that the modification period is larger than eDRX. Nokia Net thinks that this only happens when modification period is 10s and eDRX 5 second which is an unusual configuration.

Recommendation 6 To agree that CMAS and ETWS is not used if I-eDRX is used and, for EAB, if the UE supports SIB14, when in I-eDRX, it acquires SIB14 before establishing the RRC connection

- LG thinks that this is a service requirement and wonders if RAN2 can agree this. Intel indicates that the concerns for eDRX is that the UE would not meet the requirement and this is why we are stating that it is not required. LG thinks that we should reformulate the agreement to state that we will not optimize the CMAS, ETWS.
- Intel wonders if we need to inform other groups of this and this is also related to LC-MTC. Intel recommends that we inform the other groups of both eDRX and LC-MTC. Huawei thinks that it is unnecessary to inform other groups. ALU thinks it is good to inform other groups as this is our findings and there is no need to combine the LS.

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Recommendation 7 To specify MSB of H-SFN in SIB1 and discuss if 1 or 2 of the LSBs are sent in MIB.

- Qualcomm agrees that it can be useful but we need to be cautious with the MIB bits so we need to understand whether this is an optimization or absolutely necessary. LG, Samsung, Nokia Net and Huawei thinks that in SIB1 is sufficient. MIB bits are very precious.
- Intel, Sierra, InterDigital wireless indicates that for synchronization purposes it is simpler and faster for the UE to acquire the MIB and the power gains are substantial. For UE is in extended coverage this is even more beneficial.
- Ericsson thinks that this is related to the SIB discussion.
- Intel thinks that for clock compensation purposes the UE would always have to read SIB1. Mediatek thinks that the UE can maintain clock accuracy with its internal clock and it could be nice for the UE to not read SIB1 but it is not a problem.

=> Noted

R2-154846 Hyper-SFN paging procedures for eDRX QUALCOMM CDMA Technologies discussion

Proposal 1: The paging hyper frame (PH) computation should be a function of the extended I-DRX cycle and the IMSI.

- Intel thinks that we need to wait for SA2 input as we asked SA2 for inputs on how the UE determines when to wake up. Qualcomm thinks that we asked SA2 about MME determining when the UE is reachable. We decided that we will use the H-SFN in RAN2. Intel thinks that SA2 may provide additional inputs on how the UE wakes up and maybe not using the IMSI. Qualcomm indicates that we did not ask SA2 when the UE should wake up.
- ALU wonders if this solution requires a tight synchronization. Qualcomm thinks that only a lose synchronization is needed. Ericsson wonders if we are assuming that MME has some form of knowledge of when the UE is reachable.

Proposal 2: The start of the paging window corresponds to the UE's first (PF, PO) within the paging hyper-frame, where the (PF, PO) follows the legacy DRX formula.

- ZTE wonders if the UE will wake up after the paging occasion. Qualcomm thinks that it is possible, but if you wake up earlier you won't miss the page.
- Nokia Net thinks that the UE should not wake up after. Qualcomm agrees that the UE should not wake up after, but it can happen especially if it moves.
- Intel wonders if based on the previous agreements all UEs will wake up at the beginning of the H-SFN. Qualcomm thinks that we can add additional optimizations to spread the UEs within the H-SFN. Nokia Net thinks that we need to distribute the UE within the H-SFN.
- ALU would like to keep the distribution of UEs within the RAN (e.g. the MME doesn't need to know)
- ALU thinks we need to think whether the MME repeats the paging as legacy or the eNB would be required to do the paging. Intel indicates that there could be a desire for the eNB to do these repetitions.

Proposal 3: The paging window duration (PW) in seconds, is broadcasted by the eNB

=> Noted

R2-154754 Paging Transmission Window Ericsson discussion
R2-154562 SI update for eDRX Nokia Networks discussion
Above 2 Tdocs not treated
R2-154663 Clarification for LC/EC and Non-LC/EC UE supporting eDRX NTT DOCOMO INC. discussion

=> Noted

Discussions on paging window

Option 1: The UE is only required to monitor one of its legacy (PF, PO) during the paging window.

Option 2: The UE monitors in all PF, PO within the paging window

Agreements:
Idle mode eDRX
- To define the H-SFN as new frame structure on top of legacy SFN structure where each H-SFN value

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corresponds to a cycle of legacy SFN of 1024 frames
- A H-SFN cycle of 10 bits indicating SFN will be adapted, for future proofness.
- The maximum I-eDRX cycle is 43.69min.
- To define the range of value of I-eDRX cycle as numbers that are a power of two (2n)
- RAN2 thinks that ETWS, CMAS, PWS requirement cannot be met when eDRX is configured. We will not optimize to meet the requirement.
- For EAB, if the UE supports SIB14, when in I-eDRX, it acquires SIB14 before establishing the RRC connection
- To specify H-SFN in SIB1. FFS if the precious bits in the MIB can be used
- Not to define a default I-eDRX cycle value per eNB; to support implicit I-eDRX support indication thought the inclusion of H-SFN
- Paging hyper frame (PH) computation should be a function of the extended I-DRX cycle and the IMSI mod(1024). RAN2 assumes that SA2 will work on the details of MME paging strategy based on this formula.
- The starting point of the window is designed such that a fair distribution within the H-SFN paging frame. Details of the formula are FFS.
- FFS how and who configures the PW
- FFS The UE is only required to monitor one of its legacy (PF, PO) during the paging window or whether it monitors the full paging window

Connected mode
- C-eDRX cycle values are the same as the ones defined for the I-eDRX cycle only up to 10.24sec (i.e. 5.12 and 10.24 sec)
- C-eDRX is defined as extension of legacy long DRX cycle
-

=> LS to SA2 and RAN3 – Ericsson
- Inform SA2 of agreements on number of bits and eDRX ranges and of RAN2 findings related to ETWS, CMAS
- Inform SA2 of the agreement that the paging hyper frame should be a function of the extended I-DRX cycle and the IMSI mod(1024)
- RAN2 will ask SA2 to take the agreements into account and ask if additional considerations need to be taken into account in RAN2.

R2-154919 Draft LS on eDRX agreements Ericsson LS out from: RAN2 to: SA2 and RAN3 Rel-13 LTE_extDRX-Core
[CB]

✉ **[LTE/eDRX] – eDRX aspects – Qualcomm**
- Discuss details of eDRX formula and the starting point of the paging window.
- Discuss how PTW is configured (whether it is NAS, eNB, or fixed), value range of PTW and whether the UE monitors all paging occasion within a window or only a limited number of POs within the window. Discuss what legacy DRX cycles are used during the paging window.
- Discuss system information update
- Intended outcome: Recommend proposals as inputs to next meeting
- Deadline: Nov. 4th

✉ **[LTE/eDRX] – Running stage 2 CR - Qualcomm**
- Endorse a running stage 2 CR capturing all eDRX related agreements up to RAN2#91bis (R2-154920)
- Deadline: one week after the meeting

R2-154171	Need of shorter wake up duration from eDRX	SoftBank Corp.	discussion
R2-154173	UE request on idle mode eDRX cycle value	SoftBank Corp.	discussion
R2-154279	Considerations for loose paging occasion synchronism between eNBs	Sierra Wireless, S.A.	discussion
R2-154295	*Open aspects on extending DRX cycle for idle mode*	*Intel Corporation*	*discussion*
R2-154310	Remaining issues on the I-eDRX	FUJITSU LIMITED	discussion

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R2-154313 Considerations for paging occasion change indication in idle mode eDRX Sierra Wireless, S.A. discussion
R2-154357 Extending DRX Cycle in Idle Mode Huawei, HiSilicon discussion
R2-154421 Remaining Issues for Idle Mode DRX Extension in LTE MediaTek Inc. discussion
R2-154427 *Paging occasion calculation for eDRX operation in idle mode Nokia Networks discussion*
R2-154435 Signalling for Rel-13 eDRX support Samsung Telecommunications discussion
R2-154442 On the ETWS/CMAS support in Rel-13 eDRX Samsung Telecommunications discussion
R2-154450 SI update for eDRX Nokia Networks discussion
late
R2-154467 Impacts on system change acquisition for eDRX and transmission of H-SFN. LG Electronics Inc. discussion
R2-154652 Handling of the System Information Update for I-eDRX UEs INTERDIGITAL COMMUNICATIONS discussion
R2-154681 Idle mode UE behaviour with Extended DRX Kyocera discussion
R2-154817 Impact of PTW on power consumption in I-eDRX Intel Corporation discussion
R2-154848 Draft Running 36.300 CR to capture agreements on RAN enhancements for extended DRX in LTE QUALCOMM CDMA Technologies draftCR 36.300 13.1.0 B Rel-13 LTE_extDRX-Core
wrong spec ver number used in CR cover; it should be 13.1.0
Above 17 Tdocs not treated

7.9.2 eDRX for connected mode

RAN2 issues related to extending DRX up to 10.24s in connected mode.

Note: RAN-68 agreed that extended connected mode DRX cycle beyond 10.24 seconds is no longer pursued in this WI

R2-154422 Remaining Issues for Connected Mode DRX Extension in LTE MediaTek Inc. discussion
R2-154078 the network capacity issues with the C-eDRX Beijing Xinwei Telecom Techn. discussion
R2-154358 Extending DRX Cycle in Connected Mode Huawei, HiSilicon discussion
R2-154438 How to apply the extended DRX in the connected mode Samsung Telecommunications discussion
R2-154439 Connected mode eDRX operation Nokia Networks discussion
R2-154852 Extended DRX in connected mode QUALCOMM CDMA Technologies discussion
Above 6 Tdocs not treated

7.10 SI: Study on Latency reduction techniques for LTE

(FS_LTE_LATRED; leading WG: RAN2; started: Mar. 15; target: June 16; WID: RP-150465)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session

TR

TR 36.881 v0.3.0 is agreed in R2-153984 (result of email discussion [91#17])

7.10.1 L2 enhancements to reduce latency

SPS

R2-154742 Skipping padding in SPS and dynamic grants Ericsson discussion
- Samsung wonders if we should decide whether we support UL skipping for both SPS and dynamic grants. Nokia Net indicates that we already agreed in the last meeting.
- Panasonics asks if the proposal 1 is only for the case that there is no data in the buffer. Ericsson confirms.
- Nokia Net indicates that if the UE doesn't transmit any data it doesn't monitor PHICH. Ericsson agrees and wants to cover the case where the UE sends something but the network doesn't receive anything.

Proposal 2

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- CATT thinks that Proposal 2 is different from current UE behaviour as today the UE will release right away and not send anything before releasing. Ericsson thinks the intention is not to delay the release. Intel thinks that it delays the release.
- Asustek wonders if why we cannot use the ACK feedback for the SPS release like for DL case. Panasonic indicates that for the DL PDCCH there is an UL resource in the DCI to send the ACK.

- Qualcomm wonders if the grant is given to a single UE or to multiple UEs and if there are multiple UEs then the eNB wouldn't know which UE send the data. Nokia Net thinks that we should only consider dedicated grant.

=> Noted

R2-154353 Enhancements on SPS prescheduling Samsung Electronics Co., Ltd discussion

Proposal 1
- LG thinks that implicit release it is difficult to be configured and should be disabled. Samsung thinks that there is no problem with the implicit release.

Proposal 3
- LG wonders if the UE can be configured in multiple cells. Samsung thinks it should be on a single cell. LG thinks that we need think more whether it is necessary if we have to configure SPS as the main use case is small data.

=> Noted

Discussions on 4742 and 4353

UE behaviour on SPS activation
- Huawei thinks that it is not necessary to provide feedback as the PDCCH loss is an error case. Nokia Net thinks that it would be good to have some feedback. ZTE and LG thinks that a more PDCCH can be transmitted to avoid the PDCCH loss.
- Qualcomm thinks that some form of ACK can be beneficial but some problems can occur if we have contention based.
- CATT thinks that there is a benefit to send the feedback and the behaviour should be the same in both cases.
- Ericsson thinks there is a benefit and relying on the PDCCH robustness is limiting. Samsung thinks that today we don't send an explicit feedback and even if the UE misses the PDCCH the criticality is not so severe.
- Chair thinks that we can capture both solutions in the TR and the pros/cons of each solution. Ericsson and Nokia agrees. Nokia Net thinks that this should also be applicable to the dynamic grant solution.
- ZTE thinks that we should first decide on the problem

Agreements:
- For the SPS activation/release at least two possible approaches will be captured in the TR. For each approach the concerns and advantages will be captured.
  - To acknowledge the SPS grant reception or release *(e.g. the UE sends padding once)*
  - To not introduce a mean to acknowledge SPS activation signal
  - Other solutions have not been proposed
  - FFS whether an acknowledgement is needed

✉ **[LTE/LATRED] – L2 enhancements - Ericsson**
- Capture agreements on SPS activation/deactivation
- **Intended outcome**: Text proposal to capture the advantages/disadvantages of each approach
- **Deadline**: Nov. 4th

R2-154120 DRX and Short interval SPS CATT discussion
R2-154121 PDCCH missing issue with skipping UL transmission CATT discussion
R2-154142 Potential issues on enhanced SPS mechanism China Mobile Com. Corporation discussion
R2-154192 Further analysis on uplink transmission skipping Huawei, HiSilicon discussion
R2-154350 Further discussion on Prescheduling Samsung Electronics Co., Ltd discussion

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R2-154354 Enhancements on SPS prescheduling Samsung Electronics Co., Ltd pCR Rel-13 FS_LTE_LATRED
R2-154355 Configuring SPS on SCell Samsung Electronics Co., Ltd pCR 36.331 Rel-13 TEI13, FS_LTE_LATRED
wrong Type used; it should be "draftCR"
R2-154351 Skipping uplink transmission on configured uplink grant with no data to transmit Samsung Electronics Co., Ltd pCR 36.321 Rel-13 TEI13, FS_LTE_LATRED
wrong Type used; it should be "draftCR"
R2-154352 Skipping uplink transmission on configured uplink grant with no data to transmit Samsung Electronics Co., Ltd pCR 36.331 Rel-13 TEI13, FS_LTE_LATRED
wrong Type used; it should be "draftCR"
R2-154533 Supporting MU-MIMO in enhanced uplink SPS transmission Lenovo (Beijing) Ltd discussion
R2-154534 The Impact of Latency Reduction on UL SPS ASUSTEK COMPUTER (SHANGHAI) discussion
R2-154554 Further Discussion on SPS with Consideration to Resource Efficiency ETRI discussion
R2-154386 Further aspects of fast uplink access solutions Intel Corporation discussion
Above 13 Tdocs not treated

R2-154491 Potential protocol enhancement for Fast uplink access Nokia Networks discussion
Proposal 1: With fast uplink grant solution, UE skips sending padding empty BSR for configured prohibit period if there is no data in UL buffer.
- Samsung wonders what the intention of this proposal is. Nokia Net thinks that the network can use the BSR received to maintain the connection. Qualcomm and Huawei doesn't see the gains. ZTE sees an issue with maintaining and configuring the timer. Nokia Net thinks this is network implementation.

Proposal 2: When fast uplink access is configured and if DRX is configured, UE works in DRX Active state when a regular BSR has been triggered, instead of after SR is sent.
- LG thinks that transmitting a BSR doesn't mean that the network will schedule an UL grant and if you move to active state it will have an impact to battery consumption. Samsung thinks that this is not needed for SPS. Nokia Net indicates that this is only for pre-scheduling.
- Ericsson wonders if this is a new timer. Nokia Net thinks that there is no timer, it will be similar to SR behaviour.

=> Noted

Pre-scheduling, SPS resource usage

R2-154122 Analysis on resource efficiency of uplink access solutions CATT, CATR discussion
CB-PUSCH analysis
- Nokia Net thinks that we already studied this in RAN2 and there were a large number of impacts and the work was stopped. Huawei thinks that CB is interesting solution that should be considered and can be achieved with minimal RAN2 impacts. LG agrees with Nokia Net. CMCC thinks that since this is a study item we have the opportunity to study it.
- CATT thinks that the rel-10 work didn't have any evaluation on collision probability and with these evaluation we should that there is a resource efficiency problem. ETRI agrees with CATT.
- US Gov supports to include this in the study item and the latency is very important for public safety use cases.

=> Noted

R2-154191 Contention based uplink transmission Huawei, HiSilicon discussion
- Ericsson thinks that we can indicate in the TR some results on the evaluation and indicate that from RAN2 point of view the impact is minimal. Nokia Net thinks that we should not involve RAN1. Huawei thinks that we will not be changing RAN1 specs.
- LG thinks that if there is a collision the eNB may not be able to detect the UE that performed the transmission. Huawei thinks that if different UEs can send using DM-RS resources the eNB can distinguish. Nokia Net thinks that we may have an issue with the feedback as you can only send on P-HICH per UL grant. Huawei thinks that different PHICH will be configured for different UEs.
- Nokia Net doesn't know how we can capture the evaluation as we don't have a solution. Ericsson thinks that we have some evaluation that capture full overlap and DM-RS and we can capture them and provide RAN2 input. Qualcomm supports Ericsson's view.
- Samsung is not sure how the full procedure works.

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- Ericsson thinks that we should capture some collision probability analysis and can have some text to indicate the status of the discussion and the evaluation assumptions.
- CATT indicates that there are two parts to the analysis, efficiency of the current solutions (SPS) and of CB-PUSCH solution.

=> We will capture some form evaluation analysis of current solutions and of CB-PUSCH. FFS what we capture in the solutions.
=> Noted

✉ **[LTE/LATRED] - CB-PUSCH – Huawei**
- Text proposal to capture the resource efficiency evaluations of existing solutions and CB-PUSCH solutions and gains. The TP will also capture a summary of the assumption and how the solution works.
- Discuss whether a conclusion on the solution itself can be reached
- Deadline: Nov. 6th

Other

R2-154193 Downlink latency reduction for unsynchronized UEs Huawei, HiSilicon discussion
R2-154318 Enhanced Scheduling Request for Latency Reduction LG Electronics Inc. discussion
R2-154741 Layer 2 solutions for latency reduction Ericsson discussion

R2-154322 Long-duration UL grant LG Electronics Inc. discussion
R2-154411 Combined SR with BSR for reducing UP latency III discussion
Above 5 Tdocs not treated

7.10.2 TTI reduction

Including output of email discussion [91#29][LTE/Latency] Evaluation results (Ericsson)

R2-154743 Email discussion report on [91#29][LTE/Latency] Evaluation results Ericsson (Rapporteur) report
Late
=> Noted

R2-154744 TR Text Proposal capturing outcome of [91#29][LTE/Latency] Evaluation results Ericsson (Rapporteur) pCR
late
- Intel wonders if the intention is to keep this as a separate section 9 or merge it with section 8. Ericsson intends to continue using the structure in the TP and add simulations in section 9.
- Ericsson thinks that we should add a subheading to explain what specific evaluation the section is referring to.
- Huawei wonders what the intention of section 11.1 is and whether this section will be the conclusion part of the final TR. Ericsson thinks this is a placeholder and we can adapt the format as we go. If we have additional evaluations we can add them to this.
- Nokia Net wonders if we should discuss the details of the evaluation conclusion section and would like to add additional information on what the gains of TTI reduction depend on (e.g. load). Ericsson wonders whether there is information missing or a restructuring of the text.

=> The TP will be used as a baseline for email discussion
- Ericsson thinks we should send an LS to RAN1. Huawei agrees.

=> Send LS to RAN1 with RAN2 evaluations

✉ **[LTE/LATRED] – Text proposal for protocol evaluation and LS to RAN1 – Ericsson**
- Agree to TP and TR to 36.881 v0.3.1
- Agree on LS to RAN1 (R2-154949 - LS to RAN1 on evaluation agreements and conclusions)
- Deadline: one week after the meeting

R2-154296 Protocol impact of TTI reduction Intel Corporation discussion

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- LG thinks that TTI reduction is a RAN1 aspect and we should not spend time in RAN2. Samsung agrees with LG.
- Ericsson thinks that it highlights a number of aspects but some of these are quite stage 3. Ericsson thinks that we can wait for RAN1 input to decide what to add to the TR. Huawei and OPPO agrees.
- Intel thinks that it is ok to discuss RAN2 impacts and wonders what is the plan on when to discuss these impacts.

=> RAN2 will wait for further input from RAN1 before discussing RAN2 impacts
=> Noted

R2-154172 Utilization of short TTI in higher layer ZTE Corporation discussion
R2-154563 Consideration on Heterogeneous TTIs in a Carrier ETRI discussion
Moved from 7.10.1
R2-154123 VoLTE Capacity Analysis with TTI shortening CATT discussion
What do we do with these analysis?
R2-154740 Study of shorter TTI for latency reduction Ericsson discussion
R2-154809 TCP Performance with shorter TTI lengths QUALCOMM CDMA Technologies discussion
Above 5 Tdocs not treated

7.10.3 Handover latency enhancements

Evaluation of the handover delays and investigation of possible enhancements

R2-154194 Latency reduction during Handover Huawei, HiSilicon discussion
- Intel thinks that the table doesn't include the 20ms delay from RAN4. Huawei thinks that the time to synchronize could be shorter as it can be done in advance. ZTE thinks that synchronization includes two parts, and the second part is 20ms. Nokia Net agrees with Huawei. Samsung and Qualcomm thinks that it could be even longer than 20ms.

=> Noted

R2-154813 Analysis on reduction of handover interruption Intel Corporation discussion
- Ericsson thinks that we can capture the evaluation of where the latency of handover comes from.
- Huawei thinks that we agree that we want to enhance the RACH procedure. Nokai Net agrees.

=> Noted

✉ **[LTE/LATRED] – Handover evaluations and solutions – Intel**
1st phase – Oct. 23rd
- Agree on handover evaluation numbers
- Conclude on the main handover steps that contribute to handover delays
- Initial assessments on the steps we want to address

2nd phase – Nov. 4th
- Capture potential solutions that address enhancements to the different steps identified in step 1 and the gains/complexity associated to each solution. NOTE: only solutions that have been already proposed can be included in the second phase.

R2-154168 Analysis on the handover latency ZTE Corporation discussion
R2-154259 Latency reduction during handover Nokia Networks discussion
R2-154716 Discussion on reduction of handover interruption Alcatel-Lucent Telecom Ltd discussion
R2-154810 Handover Latency Improvements QUALCOMM CDMA Technologies discussion
Above 4 Tdocs not treated

7.10.4 Other

No contributions received.

7.11 SI: Feasibility Study on LTE-based V2X Services

(FS_LTE_V2X; leading WG: RAN1; started: June. 15; target: June 16; WID: RP-151109)

Time budget: 0.5 TU

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Documents in this agenda item will be handled in the LTE Break Out session

Incoming LSs

R2-154008 LS on traffic model assumption in LTE-based V2X (R1-155014; contact: LGE) RAN1 LS in to: RAN2 Rel-13 FS_LTE_V2X
- Ericsson finds it interesting that RAN1 is asking us to send LSs to other groups. LG thinks that RAN2 can determine the total overhead and if it is necessary to ask other groups they can.
- LG hopes that RAN1 assumptions are not completely wrong. Ericsson is aware that RAN1 will not get an answer this meeting but hope that an answer can be received by end of the year.

=> Noted

R2-154579 Study plan for V2X in RAN2 LG Electronics Inc. Work Plan
- Qualcomm thinks that RAN2 should also do some work on PC5. LG confirms that the SID already limits the RAN2 work and doesn't have a task for PC5 until December. Ericsson also thinks that we should study PC5 enhancements.
- Intel also agrees that the study limits RAN2 work but we will have to inevitably look at PC5 and feasibility study.
- Chair indicates that the in the plenary the first priority for RAN2 in the first two meetings was Uu analysis.
- Ericsson wonders if we can also discuss Uu enhancement before December or if the intention is to only do feasibility study. LG thinks that we can start with latency, capacity and the challenges, but not sure we can go into details by December.

=> Noted

Scenarios

R2-154581 Uu V2V scenarios LG Electronics Inc. discussion
- Intel, Ericsson, Huawei thinks that scenario 2 is not needed. This can be an implementation if the eNB needs to do it. Ericsson thinks that the question is whether this scenario is really necessary.
- InterDigital wonders if the scenario 2 is only for eNB or UE type RSU as well. LG thinks it is for eNB types also this scenario is also for V2I/V2N and this RSU should be able to capture as many messages as possible on PC5.

=> Scenario 2 is FFS
- Huawei thinks that this is a UE to NW relay case. CATT Scenario 3 thinks this is a V2I scenario and we should study this as part of V2I. Ericsson supports scenario 3. As part of scenario 1 we should also allow eNB RSU type. Nokia Net thinks that we can include this scenario but we need to take into account the one-to-one communication setup latencies.
- TIM thinks that we should maybe split the scenarios in types of the interface we use between UE and RSU and RSU to NW.
- Ericsson thinks that we should first prioritize which aspects we should analyse.
- LG thinks that we can capture the PC5 scenarios in the TR
- Coolpad thinks that the first scenario should be the scenario with highest priority.
- Qualcomm thinks that the only valuable case for scenario 3 is if the RSU UE is in a different frequency. If this is the case then there is an assumption that the UE has multiple chains. Ericsson understands the concerns but we should keep it so we can study it. LG thinks that we shouldn't prioritize anything.
- Ericsson thinks that the traffic model for the cellular traffic is missing and RAN2 can take as a baseline the RAN1 assumptions.
- Huawei wonders what the analysis will be based on for Scenario 3, UE-NW relay is not yet completed. LG thinks that this is not necessary a relay even though it looks like it.

=> Noted

Scenarios:
1. *UL to DL via E-UTRAN (eNB or RSU eNB type)*
2. *SL overhearing to DL via E-UTRAN*
3. *SL to UL via UE type RSU and DL from E-UTRAN (and bi-directional)*

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Operator scenarios:

- *single operator and multiple operators*

- LG indicates that RAN1 already considered multiple operators. DT thinks we should consider it. Qualcomm would like to understand what is meant by multiple operators. For scenario 1 it is clear that UL can be one operator and DL can be another operator. Ericsson thinks that for evaluation maybe it is not so important and for evaluation purposes only whether we have one eNB or multiple eNBs may be important. ZTE thinks that multi-operators assumes multiple eNBs.
- Ericsson is not sure that we have scenarios with more than one carrier. CATT thinks that for the evaluation we should limit to one carrier.
- Qualcomm has some concerns that we cannot make conclusions only on latency. Chair thinks that we will only do email discussion on latency but the evaluations should eventually study the additional aspects and requirements from SA1.
- Ericsson disagrees that the discussion should be only on latency.

Agreements:

RAN2 agrees to consider the following V2V scenarios for feasibility study

1. UL to DL via E-UTRAN (eNB and RSU eNB type) - higher priority for analysis study until december
2. SL to UL via UE type RSU and DL from E-UTRAN (bi-directional will also be included).
   - For the purpose of the initial evaluation we assume Rel-12 PC5 broadcast between UE and UE type RSU and Rel-12 Uu between UE type RSU and eNB

Multiple operator scenarios will be considered. For the initial analysis a single eNB and multiple eNBs are assumed. FFS which multiple operator scenarios are relevant and should be prioritized.

✉ **[LTE/V2X] – Capture agreements in TP - LG**
- Provide text proposal capturing the agreed scenarios and expected transport mechanisms
- Agree on definitions of multi-operator scenario.
- Intended outcome: Agree on text proposal capturing agreed scenarios
- Deadline: Oct. 23rd

✉ **[LTE/V2X] – Initial latency evaluation on agreed scenarios - LG**
- Agree on evaluation assumptions. On multi-operator, so far the assumption is that two user can be connected to different operators and single and two eNB deployments can be considered.
- Provide an initial analysis of latency number
- Intended outcome: Provide a summary of evaluation assumption and initial latency numbers
- Deadline: Nov. 6th

R2-154611 General Analysis of Scenarios for V2X Services Huawei, HiSilicon discussion
R2-154260 Network Architecture and Feasibility Evaluation for Uu-based V2V/V2P CATT discussionR2-154147 Considerations of V2X implications to RAN operation Nokia Networks discussion
R2-154670 V2X scenariosEricsson discussion
Above 3 Tdocs not treated

Evaluations/enhancements
R2-154567 Latency analaysis of Uu based V2V LG Electronics Francediscussion
Late revised to R2-154887
R2-154887 Latency analaysis of Uu based V2V LG Electronics Francediscussion
revision of R2-154567
R2-154669 Traffic management and resource allocation in V2X Ericsson discussion

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R2-154613 Feasibility study for Uu transport for V2V service Huawei, HiSilicon discussion
R2-154699 Evaluation of the feasibility of Uu transport for V2V ZTE discussion

R2-154263 Discussion on PC5/Uu transport for V2I/N services CATT discussion
R2-154297 Initial considerations on V2V Intel Corporation discussion
revised to R2-154896
R2-154896 Initial considerations on V2V Intel Corporation discussion
revision of R2-154297

R2-154305 Discussion on Requirements and Potential Latency Related Issues for V2X Shenzhen Coolpad Technologies discussion
R2-154500 RAN2 issues for LTE V2V ETRI other
R2-154612 Potential RAN2 Issues and Enhancements for PC5 transport of V2X services Huawei, HiSilicon discussion
R2-154614 Enhancement for Uu transport of V2V Service Huawei, HiSilicon discussion
R2-154667 Layer-2 protocol stack for PC5-based V2X Ericsson discussion
R2-154700 Enhancements for eNB type RSU and UE type RSU ZTE discussion
R2-154701 Some considerations on multi-cell multicast/broadcast for V2X ZTE discussion
R2-154800 RAN2 aspects of V2X Qualcomm Incorporated discussion
Above 16 Tdocs not treated

Message size analysis
R2-154668 Traffic characteristics of LTE-based V2X Ericsson discussion
R2-154262 Analysis on V2V message size CATT, CATR discussion
Above 2 Tdocs not treated
R2-154671 DRAFT LS on V2X message characteristics Ericsson LS out
LS answer to LSin R2-154008
- CATT thinks that security shouldn't be considered. Ericsson thinks that it is important to ask SA3.
- CATT thinks that RAN1 already made assumptions of the typical message size so we don't need to ask SA1.
- LG thinks we shouldn't delay RAN1 evaluation. Ericsson agrees, RAN1 can continue using the assumed numbers until we can some inputs from the other groups.
- Huawei thinks that we should tell RAN1 that we are assuming that they are continuing their work.
- Huawei wonders whether the LS to other groups are because RAN2 needs this information. Ericsson indicates that RAN1 ask for RAN2 to liase with other groups and hopefully provide a single answer of the full TB size.

=> RAN2 assumes that RAN will continue their work with the existing assumptions and we will respond once we have a full picture. RAN2 will use the RAN1 working assumptions until then.
=> Use the LS as a baseline
=> The LS is revised in R2-154950

R2-154950 DRAFT LS on V2X message characteristics Ericsson LS out
LS answer to LSin R2-154008 Rel-13 FS_LTE_V2X
[CB] on Friday

R2-154261 Draft Reply RAN1 LS on traffic model assumption in LTE-based V2X CATT LS out
Not treated

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Summary of the break-out session (ProSe, eDRX, V2X and LATRED) meeting

Agreed in principle CRs

None

Agreed outgoing LS

None

Comeback on Friday

R2-154917 LS to SA2 on RAN2 agreements related to ProSe LG LS out from: RAN2 to: SA2, CT1, RAN3? Rel-13 LTE_eD2D_Prox-Core

R2-154951 Draft LS on inter-frequency and inter-PLMN discovery Qualcom LS out from RAN2: to: RAN1, RAN3, RAN4 Rel-13 LTE_eD2D_Prox-Core

R2-154952 Draft LS on out-of-coverage discovery LGLS out from: RAN2 to: SA2 and CT1 Rel-13 LTE_eD2D_Prox-Core

R2-154916 LS to SA3 on on LCID and the protection of one-to-one traffic Ericsson from: RAN2 to: SA3

R2-154919 Draft LS on eDRX agreements Ericsson LS out from: RAN2 to: SA2 and RAN3 Rel-13 LTE_extDRX-Core

R2-154950 DRAFT LS on V2X message characteristics Ericsson LS out LS answer to LSin R2-154008 Rel-13 FS_LTE_V2X

E-mail discussion for the next meeting

✉ **[LTE/eD2D – UE-to NW relays] - Discuss open issues - Qualcomm**
- Discuss whether other PS discovery services can also use the discovery pool for UE-to-Network Relay and whether there is a differentiation for discovery resource pool used by ProSe UE-to-Network Relay and in-coverage remote UE
- confirm that: communication resource pool for ProSe UE-to-Network remote UE is the same as the pool for other PS ProSe communication [CB for relay UE based on agreement on whether the relay UE can be in idle mode].
- Whether the UE may select the UE-to-Network Relay which has the best link quality on PC5 and satisfies higher layer criteria

Deadline: Nov. 4th

✉ **[LTE/eD2D – Stage 2] – Running stage 2 CR – Qualcomm**
- Endorse running stage 2 CR capturing agreements from RAN2#91bis
- One week after meeting

✉ **[LTE/eD2D] – 36.331 - Samsung**
- Review initial 36.331 CR capturing agreements reached so far
- Deadline: until next meeting

✉ **[LTE/eD2D] – MAC CR – Ericsson**

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- Review initial 36.321 CR and provide comments to rapporteur
- Deadline: until next meeting

✉ **[LTE/eDRX] – eDRX aspects – Qualcomm**
- Discuss details of eDRX formula and the starting point of the paging window.
- Discuss how PTW is configured (whether it is NAS, eNB, or fixed), value range of PTW and whether the UE monitors all paging occasion within a window or only a limited number of POs within the window. Discuss what legacy DRX cycles are used during the paging window.
- Discuss sstem information update
- Intended outcome: Recommend proposals as inputs to next meeting
- Deadline: Nov. 4th

✉ **[D2D/Inter-carrier/PLMN] – Qualcomm**
- Discuss the criteria the UE should meet in order be able to transmit on the other PS and commercial carrier (e.g. whether S criterion should be met)

✉ **[LTE/D2D – Gaps] – Discussion on gap configuration – Qualcomm**
- Discuss and conclude on UE behaviour during tx gaps, the gaps request and configuration format for rx/tx, gap request triggers and whether the request is per active cell.
- Deadline Nov. 4th

✉ **[LTE/eDRX] – Running stage 2 CR - Qualcomm**
- Endorse a running stage 2 CR capturing all eDRX related agreements up to RAN2#91bis (R2-154920)
- Deadline: one week after the meeting

✉ **[LTE/LATRED] – L2 enhancements - Ericsson**
- Capture agreements on SPS activation/deactivation
- **Intended outcome**: Text proposal to capture the advantages/disadvantages of each approach
- **Deadline**: Nov. 4th

✉ **[LTE/LATRED] - CB-PUSCH – Huawei**
- Text proposal to capture the resource efficiency evaluations of existing solutions and CB-PUSCH solutions and gains. The TP will also capture a summary of the assumption and how the solution works.
- Discuss whether a conclusion on the solution itself can be reached
- Deadline: Nov. 6th

✉ **[LTE/LATRED] – Text proposal for protocol evaluation and LS to RAN1 – Ericsson**
- Agree to TP and TR to 36.881 v0.3.1
- Agree on LS to RAN1 (R2-154949 - LS to RAN1 on evaluation agreements and conclusions)
- Deadline: one week after the meeting

✉ **[LTE/LATRED] – Handover evaluations and solutions – Intel**

1st phase – Oct. 23rd
- Agree on handover evaluation numbers
- Conclude on the main handover steps that contribute to handover delays
- Initial assessments on the steps we want to address

2nd phase – Nov. 4th
- Capture potential solutions that address enhancements to the different steps identified in step 1 and the gains/complexity associated to each solution. NOTE: only solutions that have been already proposed can be included in the second phase.

✉ **[LTE/V2X] – Capture agreements in TP - LG**

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- Provide text proposal capturing the agreed scenarios and expected transport mechanisms
- Agree on definitions of multi-operator scenario.
- Intended outcome: Agree on text proposal capturing agreed scenarios
- Deadline: Oct. 23rd

✉ **[LTE/V2X] – Initial latency evaluation on agreed scenarios - LG**
- Agree on evaluation assumptions. On multi-operator, so far the assumption is that two user can be connected to different operators and single and two eNB deployments can be considered.
- Provide an initial analysis of latency number
- Intended outcome: Provide a summary of evaluation assumption and initial latency numbers
- Deadline: Nov. 6th

Comeback at the next meeting

None

Summary of Agreements on Rel-13 ProSe

ProSe enhancements

UE-to-NW Relays

Agreements on relay initiation

- eNB may broadcast a minimum and/or maximum Uu link quality threshold that a relay UE needs to respect before triggering the request for ProSe UE-to-Network discovery transmission resources. The eNB may configure none, one of the threshold or both thresholds. FFS how stage three can capture always allowing the UE to request resources, either by no threshold or by thresholds allowing a wide range of values.)
- The eNB is not made aware whether model A or model B discovery is being performed by the UE.
- FFS: Can other PS discovery services can also use the discovery pool for UE-to-Network Relay
- FFS: There is no differentiation for discovery resource pool used by ProSe UE-to-Network Relay and in-coverage remote UE
- Similar to Rel-12, UEs (both Relay and Remote) cannot use transmission resources provided by broadcast signalling when they are in RRC_CONNECTED. Reception resources provided in broadcast signalling will be used in RRC-CONNECTED as well.
- When a remote UE moves from in-coverage to out of coverage Sidelink Communication resources (i.e. Mode 1 resource, Exception pool, pre-configured resource pool) for ProSe UE-to-Network Relay Operation. FFS if additional optimization to minimize interruption when moving from out-of-coverage to in-coverage are needed and whether T300 is needed.
- Communication resource pool for ProSe UE-to-Network remote UE is the same as the pool for other PS ProSe communication [CB for relay UE based on agreement on whether the relay UE can be in idle mode].
- How and if we need to independently control UE-to-Network relay communication and group communication is FFS and depends on other discussions in other WGs.
- The “Uu link quality Threshold for remote UEs” is provided in SIB19, and can be used in both RRC_IDLE and RRC_CONNECTED by Remote UE to transmit discovery solicitation message if the Uu link quality at the UE is below this threshold.
    - If SIB19 provides Relay Discovery transmission resource, then an RRC_IDLE Remote UE receiving group communication can use it to transmit discovery solicitation message once the configured threshold is reached.

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  - If SIB19 does not provide Relay discovery transmission resources, then once the configured threshold is reached, an RRC_IDLE Remote UE enters into RRC_CONNECTED and sends SidelinkUEInformation message to request transmit resources.
- If a Remote UE is already in RRC_CONNECTED then once the configured threshold is satisfied, it sends SidelinkUEInformation message to request transmit resources.

Agreements on relay selection/reselection

- RSRP filtering only takes place across resources with the same ProSe Relay UE ID.
- ProSe Relay UE ID is available at upper layer and inter layer interaction is left to UE implementation.
- Layer 3 filtering of PC5 measurement and PC5 measurement based ranking is specified at AS layer
- It is not required to define which layer takes final decision to select a relay. There will be suitability criterion at AS layer and at upper layer; both of these criterion should be satisfied to select a relay
- *:* Following definition of relay (re)selection is defined in RAN2 specification
  - Relay Selection: Process of identifying a potential UE-to-NW relay, which can be used for connectivity service (e.g. to communicate with a PDN).
  - Relay Reselection: Process of changing previously selected UE-to-NW relay and identifying potential new UE-to-NW relay, which can be used for connectivity service (e.g. to communicate with a PDN).
- Uu (of Relay UE) signal strength is not considered for relay selection/reselection
- The ranking of UE-to-Network Relays is based on the link quality on PC5, strongest to weakest. FFS whether the UE may select the UE-to-Network Relay which has the best link quality on PC5 and satisfies higher layer criteria
- AS layer triggers relay reselection when PC5 signal strength of current relay is below configured (same threshold as agreed in RAN2#91 for suitable relay) signal strength threshold. A hysteresis will be added, a timer and/or an offset. Details will be finalized in stage 3 CR writing.
- A remote UE may send UESidelinkInformation (for relay discovery and communication) to eNB only if the Uu link quality at the UE is below an optional network configured threshold

Agreements on one to one communication:

- Unicast addresses i.e. Source UE ID and Destination UE ID are set in SRC and DST fields respectively in MAC header. RAN2 makes an initial assumption that the ID remains 24 bits (16MSBs of destination UE ID is set in the DST field in MAC header and 8 LSBs of destination UE ID are included in scheduling control information). FFS if more bits are required.
- A new MAC PDU format version number indicates that unicast addresses are set in SRC and DST fields.

Discovery in partial- and outside network coverage

Agreements:

- Resource pool configuration for PS discovery should be included into pre-configuration information
- If the S-criteria on the PS ProSe Carrier is not met, the UE can use PS ProSe Carrier discovery resources preconfigured in the UICC or ME for out of coverage PS Discovery
- UE can use PS ProSe Carrier discovery resources preconfigured in the UICC or ME if valid in the operating region. Higher layers check validity of the PS ProSe Carrier in the operating region
- Upper layer informs whether the sidelink direct discovery announcements is related to PS discovery or non-PS discovery when it configures RRC to transmit sidelink direct discovery announcement
- Both broadcast and dedicated RRC signalling can be used for indicating Behaviour 1 or Behaviour 2

ProSe discovery for inter-carrier and inter-PLMN

Agreements:

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- If SIB 19 is not broadcasted by the serving cell the UE shall not enter connected mode on the serving cell to perform discovery or to request gaps or resources.
- In SIB19 can provide discovery resources for multiple cells for an associated frequency. The cell id of the cells associated with a tx configuration will also be provided. For rx configuration a similar structure to rel-12 rx pool will be used.

- For public safety, if the UE is out-of-coverage, it only uses the pre-configured resources

FFS
- If SIB 19 is not broadcasted by the serving cell, for commercial services, may perform inter carrier discovery transmission on a carrier/PLMN that is authorized by the network, as long as ongoing Uu operations is not affected. The understanding is that UE should not request gaps in this cases.
- For PS, if SIB 19 is not broadcasted by the serving cell reads SIB 19 transmitted by the detected cell on PS carrier to acquire the discovery resource configuration for discovery transmissions.

Agreements on gaps:
- The UE during gaps intended for reception is not expected to monitor any DL channels (it is RAN2's understanding that the UE still needs to fulfil measurement requirements)
- The eNB can deconfigure a configured transmission/reception gap

Group priorities for ProSe communication

Agreements:
- There is priority associated with each logical channel. The logical channel priority is the PPPP.
- Multiple logical channels can have same priority associated with them.
- LCID and PPPP mapping is neither defined nor configured. It is up to UE implementation to perform any association.
- The mapping between priority and LCG per UE is configurable by the eNB via RRC dedicated signalling. FFS if the UE reports any priority information to the eNB.
- There is no need to define any mapping for LCID to LCG ID mapping. UE maps those LCIDs of a destination to LCG ID which has same associated priority.
- We will send an LS to SA3
- For truncated BSR, irrespective of destination ID, BS of LCGID associated with higher priority are first incorporated followed by buffer status of LCG IDs associated with lower priority in Sidelink BSR. For full BSR the UE shall follow the same rule.
- The same BSR structure as Rel-12 will be used

Agreements on autonomous mode 2 priorities
- There can be up to 8 mode 2 transmission pools, each pool will have a list of priorities (i.e. PPPP) associated with it. The number of pools can be configurable. A priority can be mapped to multiple pools.
- UE selects a particular transmission pool in which one of the associated priorities is equal to the highest logical channel priority in the MAC PDU. It is up to UE implementation how the UE select amongst multiple allowed pools.

Working assumption:
Multiple transmissions within overlapping SC periods to different destination IDs are allowed subject to SC-FDM constraint. FFS on how this is achieved and implications for Mode 1 and Mode 2.

RAN enhancements for extended DRX in LTE

Idle mode eDRX
- To define the H-SFN as new frame structure on top of legacy SFN structure where each H-SFN value corresponds to a cycle of legacy SFN of 1024 frames
- A H-SFN cycle of 10 bits indicating SFN will be adapted, for future proofness.
- The maximum I-eDRX cycle is 43.69min.
- To define the range of value of I-eDRX cycle as numbers that are a power of two (2n)

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- RAN2 thinks that ETWS, CMAS, PWS requirement cannot be met when eDRX is configured. We will not optimize to meet the requirement.
- For EAB, if the UE supports SIB14, when in I-eDRX, it acquires SIB14 before establishing the RRC connection
- To specify H-SFN in SIB1. FFS if the precious bits in the MIB can be used
- Not to define a default I-eDRX cycle value per eNB; to support implicit I-eDRX support indication thought the inclusion of H-SFN
- Paging hyper frame (PH) computation should be a function of the extended I-DRX cycle and the IMSI mod(1024). RAN2 assumes that SA2 will work on the details of MME paging strategy based on this formula.
- The starting point of the window is designed such that a fair distribution within the H-SFN paging frame. Details of the formula are FFS.
- FFS how and who configures the PW
- FFS The UE is only required to monitor one of its legacy (PF, PO) during the paging window or whether it monitors the full paging window

Connected mode

- C-eDRX cycle values are the same as the ones defined for the I-eDRX cycle only up to 10.24sec (i.e. 5.12 and 10.24 sec)
- C-eDRX is defined as extension of legacy long DRX cycle

Study on Latency reduction techniques for LTE

Agreements on SPS

- For the SPS activation/release at least two possible approaches will be captured in the TR. For each approach the concerns and advantages will be captured.
  - To acknowledge the SPS grant reception or release *(e.g. the UE sends padding once)*
  - To not introduce a mean to acknowledge SPS activation signal
  - Other solutions have not been proposed
  - FFS whether an acknowledgement is needed

Feasibility Study on LTE-based V2X Services

RAN2 agrees to consider the following V2V scenarios for feasibility study

3. UL to DL via E-UTRAN (eNB and RSU eNB type) - higher priority for analysis study until december
4. SL to UL via UE type RSU and DL from E-UTRAN (bi-directional will also be included).

- For the purpose of the initial evaluation we assume Rel-12 PC5 broadcast between UE and UE type RSU and Rel-12 Uu between UE type RSU and eNB

Multiple operator scenarios will be considered. For the initial analysis a single eNB and multiple eNBs are assumed. FFS which multiple operator scenarios are relevant and should be prioritized.

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Annex I:
LTE Breakout (SC-PTM, MCLD and MDT) session

On Tuesday and Tursday of RAN2 #91bis, in parallel to the main LTE session, an LTE User Plane session was held in room High live 4 (Level 2) chaired by RAN2 vice-chairman Hu Nan (CMCC) addressing:

On Tuesday:
7.3 LTE: REL-13: WI: Single-Cell point-to-multipoint transmission

On Tursday:
7.7 LTE: REL-13: WI: Multicarrier Load Distribution in LTE
7.13 LTE: REL-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN

The corresponding report of this session R2-154892 was presented and approved on Fri in the joint session and the contents is provided in this Annex I for convenience reasons.

7.3 WI: Single-Cell point-to-multipoint transmission

(LTE_SC_PTM-Core, leading WG: RAN2, started: June 15, target: Dec 15, WID: RP-151110)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session

The approved TR 36.890 is available here.

7.3.1 Organizational

Incoming LSs

Running CRs: *Just keep running*

Technically endorsed 36.300 CR after RAN2-91: R2-153889

R2-154199 Introduction of SC-PTM in 36.300 Huawei, HiSilicon draftCR 36.300 13.1.0 B
Rel-13 LTE_SC_PTM-Core
wrong spec version number used in CR cover
=> Postponed
=> Can be used as baseline for the email discussion.

✉ **[LTE/SC-PTM] Running 36.300 Stage-2 CR (Huawei)**
- Incorporate the related agreements of this meeting in the latest endorsed CR
=>Intended outcome: Technically endorsed running 36.300 CR for the next meeting.

R2-154200 Introduction of SC-PTM in 36.331 Huawei, HiSilicon draftCR 36.331 12.7.0
Rel-13 LTE_SC_PTM-Core
late; wrong spec ver number used in CR cover; it should be 12.7.0
=> Postponed
=> Can be used as baseline for revision

✉ **[LTE/SC-PTM] Running 36.331 CR (Huawei)**
- Capture the related agreements from this meeting
=>Intended outcome: Technically endorsed running 36.331 CR for the next meeting

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R2-154201 Introduction of SC-PTM in 36.321 Huawei, HiSilicon draftCR 36.321 12.7.0 B Rel-13 LTE_SC_PTM-Core
wrong spec ver number used in CR cover; it should be 12.7.0
=> Postponed
=> Can be used as baseline for revision

✉ **[LTE/SCPTM] Running 36.321 CR (ZTE)**
- **Capture agreements from this meeting**

=>Intended outcome: Technically endorsed running 36.321 CR for the next meeting

7.3.2 SC-PTM Configuration and Operation

Including output of [91#22][LTE/SC-PTM] Scheduling pattern, DRX and Change Notification (Huawei)

Scheduling pattern, DRX and Change Notification

R2-154195 Summary of email discussion: [91#22][LTE/SC-PTM] Scheduling pattern, DRX and Change Notification Huawei (Rapporteur) report related to email discussion [91#22] late
=> Noted

Discussion focused on the followings

1 HARQ operation is not supported for SC-MCCH.
2 HARQ operation is not supported for SC-MTCH.
3a SC-PTM scheduling/DRX pattern comprises scheduling cycle, start offset, scheduling window (onDurationTimerSC-PTM) and drx-InactivityTimerSC-PTM, which indicates the subframes during which the UE shall monitor the PDCCH to receive the MBMS service(s) of interest. Parameter drx-InactivityTimerSC-PTM can be set to 0.
3b Similar to the existing unicast DRX operation, the UE shall start or restart the drx-InactivityTimerSC-PTM if the PDCCH indicates a new SC-PTM transmission for the corresponding MBMS service of interest. The UE shall keep monitoring the PDCCH when drx-InactivityTimerSC-PTM is running.
4 SC-PTM scheduling/DRX pattern is configured on a per MBMS service basis. It is subject to the network to configure the same SC-PTM scheduling/DRX pattern to multiple services.
5a Introduce the SC-M-RNTI on PDCCH and use one bit within the 8-bit bitmap to inform UE about the change of SC-MCCH information upon session start. The value of SC-M-RNTI is predefined in the specification.
5b The SC-MCCH change notification is always scheduled in the same subframe as the SC-MCCH.

P3 a+b:
- Regarding drx-InactivitytimerSC-PTM, Vice Chairman wondering how to cope with the packet loss issue?
- ZTE don't like the timer.

P5 a+b:
- Is SC-MCCH change notification always scheduled in the same subframe as the SC-MCCH or before the real change?
- ZTE shows concern on 1.4MHz system bandwidth.
- Huawei forgets to upload the document…But it can be seen on the reflector.
- Qualcomm wants to use the 8bits to do enhancement.
- ALU, US DOC and Huawei prefer to use separate value.

Agreements

1 HARQ operation is not supported for SC-MCCH.
2 HARQ operation is not supported for SC-MTCH.
3a SC-PTM scheduling/DRX pattern comprises scheduling cycle, start offset, scheduling window (onDurationTimerSC-PTM) and drx-InactivityTimerSC-PTM, which indicates

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	the subframes during which the UE shall monitor the PDCCH to receive the MBMS service(s) of interest. Parameter drx-InactivityTimerSC-PTM can be set to 0.
3b	Similar to the existing unicast DRX operation, the UE shall start or restart the drx-InactivityTimerSC-PTM if the PDCCH indicates a new SC-PTM transmission for the corresponding MBMS service of interest. The UE shall keep monitoring the PDCCH when drx-InactivityTimerSC-PTM is running.
4	SC-PTM scheduling/DRX pattern is configured on a per MBMS service basis. It is subject to the network to configure the same SC-PTM scheduling/DRX pattern to multiple services.
5a	Introduce a new value of M-RNTI on PDCCH and use one bit within the 8-bit bitmap to inform UE about the change of SC-MCCH information upon session start. The value of the new RNTI is predefined in the specification.
5b	The SC-MCCH change notification is always scheduled in the same subframe as the SC-MCCH.

R2-154474 SC-PTM MTCH reception LG Electronics Inc. discussion
R2-154475 SC-PTM MCCH reception LG Electronics Inc. discussion
R2-154551 SC-PTM Configuration Qualcomm Incorporated discussion

L2 issues: inteded outcome is to start running 36.321 CR

R2-154879 UP issues of SC-PTM ZTE Corporation discussion
revision of R2-154130
=> Noted

Discussion focused on the following proposals

1 The MCCH for SC-PTM is named as SC-MCCH (Single Cell MCCH).
2 The MTCH for SC-PTM is named as SC-MTCH (Single Cell MCCH).
5 SC-MCCH uses RLC UM mode.
6 SC-MTCH uses RLC UM mode.
7 SC-MCCH/SC-MTCH is mapped to legacy DL-SCH.
8 Allocate the new LCID value for SC-MCCH.
10 The mapping between TMGI and G-RNTI should be one to one mapping.

P3 and 4:
- Huawei thinks we should remove them because we don't need to specify network behaviour.
- Qualcomm wants to wait for RAN1 decision.

P8:
- Qualcomm prefer different header.

P10:
=> The relation between TMGI and G-RNTI should be one to one mapping

Agreements

1 The MCCH for SC-PTM is named as SC-MCCH (Single Cell MCCH).
2 The MTCH for SC-PTM is named as SC-MTCH (Single Cell MCCH).
3 SC-MCCH uses RLC UM mode.
4 SC-MTCH uses RLC UM mode.
5 SC-MCCH/SC-MTCH is mapped to legacy DL-SCH.
6 Allocate the new LCID value for SC-MCCH.
7 The mapping between TMGI and G-RNTI should be one to one mapping.

R2-154658 Multiplexing options in SC-PTM configuration NEC discussion
R2-154662 ROHC and ciphering for SC-PTM NEC discussion
R2-154197 L2 aspects of SC-PTM Huawei, HiSilicon discussion

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R2-154130 UP issues of SC-PTM ZTE Corporation discussion
revised to R2-154879

7.3.3 Service Continuity

Including output of [91#23][LTE/SC-PTM] Service continuity (Huawei)

R2-154196 Summary of email discussion: [91#23][LTE/SC-PTM] Service continuity Huawei (Rapporteur)
report related to email discussion [91#23]
late
=> Noted

Discussion focused on the followings

1 *Any service continuity solution should consider both scenarios identified in the WID, i.e. mobility from a cell providing a MBMS service via SC-PTM to a cell also providing this MBMS service via SC-PTM and mobility from a cell providing a MBMS service via SC-PTM to a cell where the UE needs to go to unicast reception to receive this MBMS service.*
2 *Service continuity solutions shall not require new solution to achieve synchronization.*
3 *Reuse the existing SIB15 based MBMS service continuity concept for SC-PTM. RRC_CONNECTED UEs will send the MBMSInterestIndication message so that the eNB can assist the UE to stay or get on the right carrier frequency during handover. RRC_IDLE UEs will perform autonomous frequency prioritization (i.e. prioritize the SC-PTM frequency for reselection).*
4 *The UE in RRC_CONNECTED state can report the MBMS service(s) of interest (e.g. TMGI) in the MBMSInterestIndication message.*

Agreements

1 Any service continuity solution should consider both scenarios identified in the WID, i.e. mobility from a cell providing a MBMS service via SC-PTM to a cell also providing this MBMS service via SC-PTM and mobility from a cell providing a MBMS service via SC-PTM to a cell where the UE needs to go to unicast reception to receive this MBMS service.
2 Service continuity solutions shall not require new solution to achieve synchronization.

Following agreements should be used as baseline:

3 Reuse the existing SIB15 based MBMS service continuity concept for SC-PTM. RRC_CONNECTED UEs will send the MBMSInterestIndication message so that the eNB can assist the UE to stay or get on the right carrier frequency during handover. RRC_IDLE UEs will perform autonomous frequency prioritization (i.e. prioritize the SC-PTM frequency for reselection).
4 The UE in RRC_CONNECTED state can report the MBMS service(s) of interest (e.g. TMGI) in the MBMSInterestIndication message.

P2:
- Ericsson prefers not to restrict to the synchronized network for SC-PTM.

P4:
- ALU wants to understand how to use the report of MBMS service(s) of interest (e.g. TMGI) in the MBMSInterestIndication message.

Agreements

1 The availability in neighbour cells of each MBMS service included in SC-MCCH in the source cell should be indicated. SI or MCCH can be FFS.

=> Common G-RNTI solution should be ruled out.

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=> Sent LS in R2-154925 to RAN3 on the agreement above (i.e., the availability in neighbour cells of each MBMS service included in SC-MCCH in the source cell should be indicated. SI or MCCH can be FFS.) Will CB on Thursday.

- Huawei prefers to choose solution 3 as baseline due to the good performance on interruption time.
- Qualcomm prefers solution 4.
- Ericsson wondering the frequency of updating.
- Motorola Solution thinks solution 2 cannot work.

R2-154693 Service continuity with SC-PTM Kyocera discussion
R2-154553 SC-PTM Service Continuity Qualcomm Incorporated discussion
Above 2 Tdocs not treated

R2-154925 Draft LS on SC-PTM Service Continuity (to: RAN3; contact: Huawei) Huawei LS out
=> The LS is approved in R2-154926.

R2-154131 SC-PTM Service Continuity ZTE Corporation discussion
R2-154164 SC-PTM Service Continuity solution TD Tech Ltd discussion
R2-154473 SC-PTM service continuity in RRC CONNECTED LG Electronics Inc. discussion
Above 3 Tdocs not treated

7.3.4 Other

R2-154198 SC-PTM UE capability Huawei, HiSilicon discussion
R2-154560 SC-PTM counting mechanismPotevio Company Limited discussion
Above 2 Tdocs not treated

Continuation until next meeting

✉ **[LTE/SC-PTM] SC-PTM UE capability and other issues (Huawei)**
- **Discuss UE capability**
- **Discuss PDCP layer related issue**
- **Discuss whether using SI or MCCH to indicate the availability in neighbour cells of each MBMS service included in SC-MCCH in the source cell**
- **Discuss other potential left issues in the scope of WID**

=>Intended outcome: Email discussion report for the next meeting

7.7 WI: Multicarrier Load Distribution in LTE

(LTE_MC_load-Core, leading WG: RAN2, started: Mar. 15, target: Dec. 15, WID: RP-151206)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session

Incoming LS: SINR

R2-154022 Reply LS to R2-151785 on a new measurement quantity for Multicarrier Load Distribution (R4-155130; contact: China Mobile) RAN4 LS in to: RAN2 Rel-13 LTE_MC_load-Core

=> Noted

R2-154776 Signalling support for SINR measurements Ericsson discussion
=> Noted

Discussion focused on the followings

1 RAN2 should introduce signalling for inter-frequency SINR and serving cell SINR measurements. Neighbour cell intra-frequency measurements should be considered as well (depending on RAN4 discussion).

=> accepted

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2 Regarding how to perform measurement: A, B or C?
2A RS-SINR should be provided in the measurement report only if RSRQ is included as a report quantity.
- *The UE should be able to measure RS-SINR only on the carrier frequencies indicated by the eNB in the MeasObjectEUTRA.*
- *RS-SINR reporting is supported for Event A1 to A6.*

2B RS-SINR measurement of a cell (PCell) should be triggered when RSRQ measurement of the cell is beyond the threshold when applying the load balancing mechanism to maximize user throughput.
2C SINR measurements should be generic for any RRM decision (such as inter-frequency load balancing and HO decisions)
2 SINR measurements should be generic for any RRM decision (such as inter-frequency load balancing and HO decisions)
3 Current measurement framework is used for SINR measurements
4 Re-use current events for RSRP/RSRQ measurements. SINR measurements should be used in all events (except B1).
5 Extend parameters triggerQuantity and thresholdEUTRA for SINR measurements
6 For reportQuantity, in addition to legacy values "sameAsTriggerQuantity" and "both", introduce 3 new values
i. all (RSRP, RSRQ, SINR)
ii. RSRP+SINR and
iii. RSRQ+SINR
- LG thinks when RSRQ is high the SINR is more useful.
- Chair wondering how to decide the threshold of 2B.

=> We should stick to the connected mode for the SINR measurement.
=> Leave event B2 FFS.
=> Event B1 is ruled out.
7 Add a new filter coefficient for SINR measurements in quantity configuration
=> accepted
8 A range is introduced for SINR measurements based on RAN4 input
=> accepted
9 RSRQ on all OFDM symbols should be conditional mandatory if the UE supports RS-SINR.
=> FFS

Agreements

1 RAN2 should introduce signalling for inter-frequency SINR and serving cell SINR measurements. Neighbour cell intra-frequency measurements should be considered as well (depending on RAN4 discussion).
2 SINR measurements should be generic for any RRM decision (such as inter-frequency load balancing and HO decisions)
3 Current measurement framework is used for SINR measurements
4 Re-use current events for RSRP/RSRQ measurements. SINR measurements should be used in all events (except B1 and B2, which are FFS).
5 Extend parameters triggerQuantity and thresholdEUTRA for SINR measurements
6 For reportQuantity, in addition to legacy values "sameAsTriggerQuantity" and "both", introduce 3 new values
i. all (RSRP, RSRQ, SINR)
ii. RSRP+SINR and
iii. RSRQ+SINR
7 Add a new filter coefficient for SINR measurements in quantity configuration
8 A range is introduced for SINR measurements based on RAN4 input

=> **CB**: Send LS to RAN4/1 in R2-154922 to inform agreements above. (Ericsson) Come back on Friday.

R2-154109 Stage-3 work on RS-SINR measurements NTT DOCOMO, INC. discussion

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R2-154437 RS-SINR measurement condition triggered by RSRQ measurement for load balancing and a TP LG Electronics Francediscussion
R2-154110 Intdroduction of RS-SINR measurements NTT DOCOMO, INC. draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154140 Discussion on introducing RS-SINR measurement China Mobile Com. Corporation discussion
R2-154687 The impact of RS-SINR on RAN2 specification Nokia Networks discussion
Above 5 Tdocs not treated

Extension of FP

R2-154703 Extension of Frequency Priorities Nokia Networks draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
- Receiving offline comments from Intel.
=> **CB**: Offline discussion to address the comments and bring the revised CR in R2-154921 on Friday

R2-154704 Extension of Frequency Priorities Nokia Networks draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
=> **CB**: Offline discussion to address the comments and bring the revised CR in R2-154923 on Friday.

CRS v.s. OSS

Including output of [91#28][LTE/Load Balancing] Redistribution Schemes (ZTE)

R2-154440 Summary of email discussion 91#28 ZTE Corporation report summary of email discussion [91#28]
Late

- Can we achieve the consensus on the observation?
  Observation: CRS and OSS solutions are complementary solution for scenario1 and scenario2 respectively.
=> The observation is agreed
=> Alt2/atl3 mentioned in R2-154440 as OSS
=> Solutions of alt1, alt4, alt5, alt6/alt7 mentioned in R2-154440 as CRS
=> Noted

R2-154691 Paging based “One-shot” redistribution mechanism Nokia Networks discussion
- Sony thinks it should support update the reconfiguration through SI update.
=> Noted
=> Use followings as the baseline of OSS:
- *Paging may contain a simple deprioritization request to instruct the UE/UEs currently used/prioritized carrier should be temporarily assigned (with a timer) the lowest priority.*

R2-154729 A harmonised CRS solution for Idle mode load distribution Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Samsung, LG Electronics, Intel Corporation discussion
Late
- CHTTL, ITRI and Verizon also support.
=> Noted

R2-154584 Redistributing a fraction of idle mode UEs among carriers Sony discussion
- Qualcomm thinks we need a timer to avoid going back soon. Sony thinks we can synchronise between cells.
=> Noted

R2-154623 Distributing UEs to multiple carries Huawei, HiSilicon discussion
=> Noted

Discussion intended outcome one CRS

=> We choose the solution in R2-154729 as the baseline of CRS. But how to select UEs for the portion of moving to another layer is still FFS.
- Sony and MediaTek show concerns on the baseline.

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Agreements

1. Use followings as the baseline of OSS:
   Paging may contain a simple reprioritization request to instruct the UE/UEs currently used/prioritized carrier should be temporarily assigned (with a timer) the lowest priority.
2. The solution in R2-154729 as the baseline of CRS. But how to select UEs for the portion of moving to another layer is still FFS.
3. Both CRS and OSS solution should be introduced for different scenarios
4. Both details of the two solutions should be further identified

=> **CB:** ZTE will lead offline discussion aimed to identify the details of the two solutions. Come back on Friday.

R2-154783 UE redistribution for load balancing MediaTek Inc. discussion
R2-154857 Unified Redistribution Proposal QUALCOMM CDMA Technologies discussion
R2-154128 36304_CRxxxx_(Rel-13)_R2-15xxxx Randomized thrshold offset China Telecom, ZTE Corporation draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
wrong spec number used in CR cover; it should be 12.6.0
R2-154129 36331_CRxxxx_(Rel-13)_R2-15xxxx Randomized thrshold offset China Telecom, ZTE Corporation draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154434 Measurement rules supporting Cell Specific Priority LG Electronics Francediscussion
R2-154436 CR to 36304 Measurement rules supporting CSP LG Electronics FrancedraftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
wrong spec number used in CR cover; it should be 12.6.0
R2-154590 Introduction of idle mode redistribution among carriers Sony draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
wrong spec ver number used in CR cover; it should be 12.7.0
R2-154621 Distributing UEs to multiple carries Huawei, HiSilicon draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
R2-154622 Distributing UEs to multiple carries Huawei, HiSilicon draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
revised to R2-154882
R2-154882 Distributing UEs to multiple carries Huawei, HiSilicon draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
revision of R2-154622
R2-154690 Possible compromise solution for re-distribution of a fraction of users Kyocera discussion
R2-154692 Paging-triggered cell specific prioritization Kyocera discussion
R2-154703 Extension of Frequency Priorities Nokia Networks draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
R2-154704 Extension of Frequency Priorities Nokia Networks draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core
Above 14 Tdocs not treated

Withdrawn:
R2-154586 Introduction of idle mode redistribution among carriers Sony CR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core

Introducing Cell Specific Priorities

R2-154628 Cell-specific prioritization for load balancing Ericsson discussion
=> Noted
Which we should choose?
- *A separate cellSpecificReselPrioList-r13 field is introduced*
- *cell specific priority information is added as a parameter in an extension of the interFreqNeighCellList.*

Discussion
=> Waiting the output from offline discussion of details identification of two solutions.

R2-154647 Cell-specific prioritization for idle mode load balancing Ericsson draftCR 36.304 12.6.0 B Rel-13 LTE_MC_load-Core

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R2-154648 Cell-specific prioritization for idle mode load balancing (Alt 1) Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
R2-154649 Cell-specific prioritization for idle mode load balancing (Alt 2) Ericsson draftCR 36.331 12.7.0 B Rel-13 LTE_MC_load-Core
Above 3 Tdocs not treatd

7.13 WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN

(LTE_eMDT2-Core; leading WG: RAN2; started: Sep. 15; target: Dec 15; WID: RP-151611)

Time budget: 1 TU

Documents in this agenda item will be handled in the LTE Break Out session

7.13.1 QoS Verification

R2-154782 feMDT todo MediaTek Inc. discussion
=> Noted

✉ **[LTE/feMDT] Running 37.320 CR (MediaTek)**
- **Capture agreements from this meeting**
=>Intended outcome: Technically endorsed running 37.320 CR for the next meeting

R2-154105 Queuing delay measurement Nokia Networks discussion
=> Noted
R2-154685 Configuration and report mechanism for UL PDCP queuing delay measurement Kyocera discussion
- Ericsson wants to the number of thresholds. Kyocera thinks it would be 2.
=> Noted
R2-154455 Issues on reporting MDT measurement results per QCI LG Electronics Inc. discussion
=> Noted

Focused on the following points
General:
1. *MDT initiation for the QoS measurements should be possible by both OAM based MDT and Signaling based MDT. LS need to be sent to RAN3 to indicate this, as there would be S1 impact.*

=> OAM based means Management based MDT.
=> accepted
=> **CB:** Send *LS in R2-154924 to RAN3 to indicate this (i.e., MDT initiation for the QoS measurements should be possible by both OAM based MDT and Signaling based MDT), as there would be S1 impact.*

UL Queuing Delay:
2. *Location information should be reported with UL PDCP queueing delay measurement result.*

=> Location information is available according to the current mechanism by measurement report. No need to introduce new triggers for location information
2.1 Choose one:
A. UL delay measurements and reporting are using immediate MDT for configuration and reporting.
B. For the UL PDCP queuing delay measurement, the functionality for MBSFN logged MDT in connected mode is reused as much as possible. How about others measurements?
=> We choose A.
3. *The delay measurement reporting is periodical where the reporting periodicity is the measurement period.*

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=> accepted

4. Choose one:

- *A) the measurement result is converted into a ratio of packet delays exceeding a configured threshold and the total number of packets during the measurement/reporting period.*
- *B) For UL PDCP queuing delay measurement, UEs collect and report the average delay as a baseline.*
- *C) UE should begin reporting the UL PDCP queuing delay measurement results exceeding a configured delay threshold and stop reporting when the UL PDCP queuing delay measurements falls below a configured delay threshold. And the eNB should have the option to request the UE to calculate the average UL PDCP queuing delay using the UL PDCP queuing delay measurement configuration.*

=> accept A) as the baseline.

- LG disagree to use A) as baseline.

4.5 In case the number of PDCP SDUs and/or detected events will be reported, the coding of the numbers or ratio shall re-use the coding principles of those defined for MBSFN BLER reporting.

=> accepted

UL packet discard:

5. Packet discard should be introduced in addition to delay measurement to complement the report for MDT QoS verification. Regarding how to measure, choose one: UEs collect rates and report to the network. Or If any packet discard happened during the measurement period, could be a 1-bit indication in addition to delay result.

=> Not agreed

DL packet loss (reconfirm the conclusion of SI):

6. Data loss measurement shall be collected by the eNB. Data loss measurement for UL and DL are done based on existing L2 measurements (as specified today in TS 36.314 but per UE).

=> accepted as an agreement

DL packet delay:

7. DL packet delay shall be collected by the eNB based on existing L2 measurements (as specified today in TS 36.314 but per UE).

=> accepted as an agreement

Traffic drop (reconfirm the conclusion of SI):

8. UE should include presence of a QCI 1 bearer at the time of RLF in the RLF report. The UE also indicates failure of subsequent re-establishment and NAS recovery.

=> FFS

Others:

9. The eNB provides followings in MDT measurement configuration:
Radio bearers for which the MDT measurement should be performed
QCI of corresponding radio bearers

=> FFS

10. Discuss a model for the PDCP-RRC interaction required for measurement configuration and QoS metrics delivery.

=> Not needed.

Agreements

1. MDT initiation for the QoS measurements should be possible by both management based MDT and Signaling based MDT. LS need to be sent to RAN3 to indicate this, as there would be S1 impact.
2. UL delay measurements and reporting are using immediate MDT for configuration and reporting.
3. The delay measurement reporting is periodical where the reporting periodicity is the measurement period.
4. The measurement result is converted into a ratio of packet delays exceeding a configured threshold and the total number of packets during the measurement/reporting period.
5. In case the number of PDCP SDUs and/or detected events will be reported, the coding of the numbers or ratio shall re-use the coding principles of those defined for MBSFN BLER reporting.

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6. Data loss measurement shall be collected by the eNB. Data loss measurement for UL and DL are done based on existing L2 measurements (as specified today in TS 36.314 but per UE).
7. DL packet delay shall be collected by the eNB based on existing L2 measurements (as specified today in TS 36.314 but per UE).

✉ **[LTE/feMDT] Running 36.314 CR (Huawei)**
- **Capture agreements from this meeting**
- **Only capture eNB measurements**

=>Intended outcome: Technically endorsed running 36.314 CR for the next meeting

R2-154432 Procedure and Configuration for GBR Traffic QOS Verification ZTE Corporation discussion
R2-154549 UL Scheduling Delay Measurement Qualcomm Incorporated discussion
R2-154863 Enhanced QoS Verification in feMDT Huawei, HiSilicon discussion
R2-154083 Considerations on Enhanced QoS Verification Use Case CATT discussion
R2-154865 New MDT measurement introduced by feMDT Huawei, HiSilicon discussion
Above 5 Tdocs not treated

7.13.2 Coverage Optimization

eICIC issue:
R2-154084 Enhanced Coverage Optimization with eICIC CATT discussion
- CATT confirms it is only for IMM MDT.
- Nokia Networks thinks we cannot make such decision in RAN2.

=> Postponed
R2-154085 Draft LS on Enhanced Coverage Optimization with eICIC CATT LS out
=> Not treated

Data filtering due to IDC:

R2-154106 Logged MDT data filtering due to IDC Nokia Networks discussion
=> Noted
R2-154683 Potential solutions for Logged MDT under IDC interference Kyocera discussion
=> Noted

Discussion should focus on:

1. UEs in RRC_IDLE supporting the IDC mechanism suspends logging for measurements affected by IDC interference

=> Suspends logging measurements if any frequency affected.
=> We should believe our UEs…

2. Choose one:

2A UE suspending MDT logging due to IDC indicates the reason why the measurement logging has been stopped. FFS:UE should discard all logged data when it detects the start of IDC interference. And UE should keep the MDT configuration and restart the logging after the IDC problem is resolved

2B UE should discard all logged data when it detects the start of IDC interference. And UE should keep the MDT configuration and restart the logging after the IDC problem is resolved.

=> Choose 2A.

3. To discuss whether UE incapable of IDC indication also should be able to perform selective measurement logging based on in-device interferences.

- Seems we should introduce new capability

=> Not agreed

Agreements

1. UEs in RRC_IDLE supporting the IDC mechanism suspends logging for measurements affected by IDC interference. Suspends logging measurements if any frequency affected.

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2. UE suspending MDT logging due to IDC indicates the reason why the measurement logging has been stopped. **FFS:**UE should discard all logged data when it detects the start of IDC interference. And UE should keep the MDT configuration and restart the logging after the IDC problem is resolved

✉ **[LTE/feMDT] Running 36.331 CR (Nokia Networks)**
- **Capture agreements from this meeting**

=>Intended outcome: Technically endorsed running 36.331 CR for the next meeting

R2-154446 On handling MDT measurement results impacted by IDC Samsung Telecommunications discussion

R2-154577 MDT with in-device interference LG Electronics Francediscussion late

R2-154864 Enhanced Coverage Optimization in feMDT Huawei, HiSilicon discussion B Rel-13 LTE_eMDT2-Core

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R2-154831 Introduction of LoggedMeasurementResults filtering due to IDC Nokia Networksdraft CR 36.331 12.7.0 B Rel-13 LTE_eMDT2-Core

=> Not treated

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Summary of the LTE Break-Out session (SC-PTM, MCLD and MDT)

In-principle Agreed draftCRs

None

Approved outgoing LS

R2-154926 LS on SC-PTM Service Continuity (to: RAN3; contact: Huawei) Huawei LS out

Comeback on Friday

R2-154922	Reply LS on a new measurement quantity for Multicarrier Load Distribution				Ericsson	
R2-154921	Extension of Frequency Priorities	Nokia Networks	draftCR	36.331	12.7.0	B Rel-13 LTE_MC_load-Core
R2-154923	Extension of Frequency Priorities	Nokia Networks	draftCR	36.304	12.6.0	B Rel-13 LTE_MC_load-Core

=> **CB:** ZTE will lead offline discussion aimed to identify the details of the two solutions. Come back on Friday.

R2-154924 LS on feMDT MTK

E-mail discussion

Until the next meeting:

- ✉ **[LTE/SC-PTM] SC-PTM UE capability and other issues (Huawei)**
  - **Discuss UE capability**
  - **Discuss PDCP layer related issue**
  - **Discuss whether using SI or MCCH to indicate the availability in neighbour cells of each MBMS service included in SC-MCCH in the source cell**
  - **Discuss other potential left issues in the scope of WID**

  =>Intended outcome: Email discussion report for the next meeting

- ✉ **[LTE/SC-PTM] Running Stage-2 CR (Huawei)**
  - **Incorporate the related agreements of this meeting in the latest endorsed CR**

  =>Intended outcome: Technically endorsed running 36.300 CR for the next meeting

- ✉ **[LTE/SC-PTM] Running 36.331 CR (Huawei)**
  - **Capture the related agreements from this meeting**

  =>Intended outcome: Technically endorsed running 36.331 CR for the next meeting

- ✉ **[LTE/SCPTM] Running 36.321 CR (ZTE)**
  - **Capture agreements from this meeting**

  =>Intended outcome: Technically endorsed running 36.321 CR for the next meeting

- ✉ **[LTE/feMDT] Running 37.320 CR (MediaTek)**
  - **Capture agreements from this meeting**

  =>Intended outcome: Technically endorsed running 37.320 CR for the next meeting

- ✉ **[LTE/feMDT] Running 36.314 CR (Huawei)**
  - **Capture agreements from this meeting**

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- **Only capture eNB measurements**

=>Intended outcome: Technically endorsed running 36.314 CR for the next meeting

✉ **[LTE/feMDT] Running 36.331 CR (Nokia Networks)**
- **Capture agreements from this meeting**

=>Intended outcome: Technically endorsed running 36.331 CR for the next meeting

Comeback at the next meeting

None

Agreements

SC-PTM:

Agreements

1 HARQ operation is not supported for SC-MCCH.
2 HARQ operation is not supported for SC-MTCH.
3a SC-PTM scheduling/DRX pattern comprises scheduling cycle, start offset, scheduling window (onDurationTimerSC-PTM) and drx-InactivityTimerSC-PTM, which indicates the subframes during which the UE shall monitor the PDCCH to receive the MBMS service(s) of interest. Parameter drx-InactivityTimerSC-PTM can be set to 0.
3b Similar to the existing unicast DRX operation, the UE shall start or restart the drx-InactivityTimerSC-PTM if the PDCCH indicates a new SC-PTM transmission for the corresponding MBMS service of interest. The UE shall keep monitoring the PDCCH when drx-InactivityTimerSC-PTM is running.
4 SC-PTM scheduling/DRX pattern is configured on a per MBMS service basis. It is subject to the network to configure the same SC-PTM scheduling/DRX pattern to multiple services.
5a Introduce a new value of M-RNTI on PDCCH and use one bit within the 8-bit bitmap to inform UE about the change of SC-MCCH information upon session start. The value of the new RNTI is predefined in the specification.
5b The SC-MCCH change notification is always scheduled in the same subframe as the SC-MCCH.

Agreements

1 The MCCH for SC-PTM is named as SC-MCCH (Single Cell MCCH).
2 The MTCH for SC-PTM is named as SC-MTCH (Single Cell MCCH).
3 SC-MCCH uses RLC UM mode.
4 SC-MTCH uses RLC UM mode.
5 SC-MCCH/SC-MTCH is mapped to legacy DL-SCH.
6 Allocate the new LCID value for SC-MCCH.
7 The mapping between TMGI and G-RNTI should be one to one mapping.

Agreements

1 Any service continuity solution should consider both scenarios identified in the WID, i.e. mobility from a cell providing a MBMS service via SC-PTM to a cell also providing this MBMS service via SC-PTM and mobility from a cell providing a MBMS service via SC-PTM to a cell where the UE needs to go to unicast reception to receive this MBMS

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service.
2 Service continuity solutions shall not require new solution to achieve synchronization.

Following agreements should be used as baseline:

3 Reuse the existing SIB15 based MBMS service continuity concept for SC-PTM. RRC_CONNECTED UEs will send the MBMSInterestIndication message so that the eNB can assist the UE to stay or get on the right carrier frequency during handover. RRC_IDLE UEs will perform autonomous frequency prioritization (i.e. prioritize the SC-PTM frequency for reselection).
4 The UE in RRC_CONNECTED state can report the MBMS service(s) of interest (e.g. TMGI) in the MBMSInterestIndication message.

Agreements

1 The availability in neighbour cells of each MBMS service included in SC-MCCH in the source cell should be indicated. SI or MCCH can be FFS.

MCLD:

Agreements

1 RAN2 should introduce signalling for inter-frequency SINR and serving cell SINR measurements. Neighbour cell intra-frequency measurements should be considered as well (depending on RAN4 discussion).
2 SINR measurements should be generic for any RRM decision (such as inter-frequency load balancing and HO decisions)
3 Current measurement framework is used for SINR measurements
4 Re-use current events for RSRP/RSRQ measurements. SINR measurements should be used in all events (except B1 and B2, which are FFS).
5 Extend parameters triggerQuantity and thresholdEUTRA for SINR measurements
6 For reportQuantity, in addition to legacy values “sameAsTriggerQuantity” and “both”, introduce 3 new values
i. all (RSRP, RSRQ, SINR)
ii. RSRP+SINR and
iii. RSRQ+SINR
7 Add a new filter coefficient for SINR measurements in quantity configuration
8 A range is introduced for SINR measurements based on RAN4 input

Agreements

1. Use followings as the baseline of OSS:
Paging may contain a simple reprioritization request to instruct the UE/UEs currently used/prioritized carrier should be temporarily assigned (with a timer) the lowest priority.
2. The solution in R2-154729 as the baseline of CRS. But how to select UEs for the portion of moving to another layer is still FFS.
3. Both CRS and OSS solution should be introduced for different scenarios
4. Both details of the two solutions should be further identified

feMDT:

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Agreements

1. MDT initiation for the QoS measurements should be possible by both management based MDT and Signaling based MDT. LS need to be sent to RAN3 to indicate this, as there would be S1 impact.
2. UL delay measurements and reporting are using immediate MDT for configuration and reporting.
3. The delay measurement reporting is periodical where the reporting periodicity is the measurement period.
4. The measurement result is converted into a ratio of packet delays exceeding a configured threshold and the total number of packets during the measurement/reporting period.
5. In case the number of PDCP SDUs and/or detected events will be reported, the coding of the numbers or ratio shall re-use the coding principles of those defined for MBSFN BLER reporting.
6. Data loss measurement shall be collected by the eNB. Data loss measurement for UL and DL are done based on existing L2 measurements (as specified today in TS 36.314 but per UE).
7. DL packet delay shall be collected by the eNB based on existing L2 measurements (as specified today in TS 36.314 but per UE).

Agreements

1. UEs in RRC_IDLE supporting the IDC mechanism suspends logging for measurements affected by IDC interference. Suspends logging measurements if any frequency affected.
2. UE suspending MDT logging due to IDC indicates the reason why the measurement logging has been stopped. **FFS:**UE should discard all logged data when it detects the start of IDC interference. And UE should keep the MDT configuration and restart the logging after the IDC problem is resolved

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Annex J:
LTE Breakout (NB-IoT) session

On Tuesday, Wednesday and Tursday of RAN2 #91bis, in parallel to the main LTE session, an LTE User Plane session was held in room Ballroom CD (3rd floor) of Scandic Triangeln hotel chaired by session chairman Johan Johansson (MediaTek) addressing:

From Tuesday to Tursday:
7.16 LTE: Rel-13: WI: Narrowband IOT

The corresponding report of this session R2-154893 was presented and approved on Fri in the joint session and the contents is provided in this Annex J for convenience reasons.

7.16 WI: Narrowband IOT

(NB_IOT-Core; leading WG: RAN1; started: Sep. 15; target: Mar. 16; WID: RP-151621)

Time budget: N/A

Overall: At this meeting we need to determine the scope of the work. Which parts of LTE TSes to be reused, which parts are not applicable, which parts need change. Identification of issues and candidate solutions. The mindset should be that Requirements in TR 45.820 shall be fulfilled.

7.16.1 General

Organization etc, opportunity for rapporteurs to provide wise words. Review of requirements. Overall cross CP/UP aspects. Different levels of coverage / coverage classes.

Guidelines, Functional Requirements Inclusions Exclusion, Inter WI Coordination: eMTC, eDRX, Signaling Enhancements, Number of Bearers, QoS, Mobility, Coverage Levels

Discussions on HARQ, RLC, PDCP or header compression take place with UP parts.

R2-154174 NB-IOT OverviewEricsson discussion
- The chair comments that pain vs gain analysis is always done in Ran2.
- Huawei think we cannot make agreements on this general level.
- Vdf think we should use the TR as much as possible.
- QC thinks that we are facing quite fundamental changes, e.g. MAC, e.g. for system arch. Docomo would like to have high degree of alignment between eMTC and NB-Iot.
- Vodafone point sout that we need to optimize differently for NB-IOT due to requirements, thus there is indeed a mindset difference. DT agrees and points out that the competition is external and we need to optimize differently that what we are used to in 3GPP. ZTE thinks this is a trade-off.
- The chair comments that we need to reuse the TR rather than to redo what is in the TR.
- ZTE and Ericsson think it may not be possible to reach the requirements in the TR for non-standalone deployments. Vodafone and DT thinks the objectives in the TR are general and applicable regardless deployment scenarios. If there are differences for requirements fulfilment they would probably not be in RAN2.

Proposal 1:
- Intel thinks that this is according to assumptions. Vodafone points out that eDRX is a system wide feature which is complex to roll out. LG Nokia and Docomo supports proposal 1. Vodafone has doubts that this agreements has any value,

Proposal 5:
- Intel thinks we should try do clarify use cases.

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⇒ **NB-IoT MAC, RLC, PDCP and RRC is based on LTE Rel-13. RAN2 aims to reuse as much as reasonable w.r.t. eMTC and eDRX enhancements. Details to be discussed case by case.**

R2-154726 NB-IoT – Key requirements QUALCOMM CDMA Technologies discussion

- Vodafone point out that we may need multiple narrowbands for capacity, which means that the system bandwidth is indeed TBD for inband scenario. Ericsson and Huawei considered this a RAN1 decision.
- Intel thinks we can agree to the assumption that the UE only rec one NB carrier a 180 KHz (at a time).
- In access, we discriminate between 2 cases, to support priority discrimination between normal reporting and exception reports.
- DT explains that EAB is not needed because the whole system is for delay tolerant traffic. DT confirms that this is the conclusion from GERAN.
- Vodafone thinks that access control or priority mechanisms for NB-IOT may anyway need discrimination between roamers etc. Nokia and Teliasonera agrees that this is important.
- Ericsson thinks we should allow usage of use EAB as it is optional. Neul thinks that we need to optimize further for NB-IOT and we should remove functions that are not needed. DT agrees with Neul.
- Ericsson thinks that we can have optional features as they don't consume broadcast bandwidth.
- Huawei think we should have one mechanism, either EAB or ACB. LG agrees. ZTE agrees.
- ZTE wonders what is meant by inter-frequency, e.g. for Inband scenario. Chair think we can address the details later.
- Vodafone points out that Public Warning System support may need to be added later.
- On eDRX, Vodafone points out that we need DRX in normal range as well as in eDRX range. QC points out that we maybe don't need to discriminate between eDRX and normal DRX for NB-IOT. Vodafone points out that eDRX requires Core network changes. QC think that NB-IOT anyway requires an enhanced CN. Cisco agrees, and points out that normal DRX in Idle mode is essential.
- Huawei explains that both DRX and PSM has been discussed in GERAN and assumes that we need both.
- Event based neighbor cell monitoring (inter- and intra-frequency). The purpose is to optimize measurements in the UE for Idle mode. We assume that LTE S threshold can be used to optimize battery consumption. FFS whether further optimization is needed.
- DT wonders if we want to introduce connected mode cell reselection. DT suggest to not support this.
- Ericsson proposes to support redirection, and maybe also reestablishment. Huawei thinks this requires measurement reporting, and wonders what is the scenario. Ericsson thinks the network should be in control. Vodafone thinks that if this is the case, blind redirection could be supported, but is concerned about the additional message needed. QC don't' see tha need for any network controlled redirection because the UE can be kept in connected for very short times. DT agrees this is not needed. TI agrees and think we can discuss further based on contributions. Vodafone thinks we don't need redirection either.
- LG don't want to introduce a reestablishment procedure for NB-IOT.

P4

- Vodafone comments that this may not be possible for deployment reasons. DT confirms that this may not be possible and we should keep the options open. GERAN solution involves that the UE can have two modes.
- We need to wait for SA2
- QC are concerned about the UE complexity.
- Discussion can be continued when we have more input from SA2.

We will support

⇒ **Network sharing, up to 6 PLMNs**

⇒ **Access control (per PLMN)**

⇒ **We will aim to have only one mechanism for Access Control. Details FFS.**

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⇒ **In access, we discriminate between 2 cases, to support discrimination between normal reporting and exception reports.**

⇒ **Intra-frequency and Inter-frequency cell-reselection. Details FFS.**

⇒ **Power Saving Mode (as per Release 12)**

⇒ **Idle mode DRX with DRX cycle values in the "normal" range and in eDRX range**

We assume we will not support

⇒ **Inter-RAT cell-reselection, or Inter RAT mobility in connected mode (Note that in this respect NB-IOT is a separate RAT from LTE).**

⇒ **Public warning function, CMAS, ETWS, PWS.**

⇒ **Network controlled handover. We will not have measurement reporting either, but can be discussed based on contributions.**

R2-154869 General assumptions to work on NB-IoT together with Rel-13 eMTC NTT DOCOMO, INC. discussion

- Docomo clarifies that an additional aspect is cell barring and cell reservation that should be supported.

⇒ **We confirm that functionality of cell barring and cell reservation is supported for NB-IOT.**

Where to capture agreements:

- Chair thinks that a common way is to have a stage-2 running CR. ALU thinks this is a good way. DT agrees. Huawei agrees. Intel would be fine with this.
- Intel wonders if we use the LTE TSes or not. DT thinks we can for the moment assume a 36.300 CR, with a new section. TIM agrees.
- ZTE thinks that agreements can be kept in chairman notes and summarized in Status reports
- Docomo wonders if we can merge the CR for NB-IOT and eMTC. DT think we have not decided if this is a separate RAT or not.
- Intel thinks that the deadline depends on LSes etc. Vodafone thinks we shuld have early deadline for communication with other groups.

⇒ **Procedure: Tag all email discussions on NB-IOT**

⇒ **We will capture agreements in a running stage-2 CR to 36.300 for NB-IOT (Huawei)**

✉ **Email discussion (2 weeks) to agree on first version of running CR (Huawei)**

R2-154772 L2-3 considerations for NB-IoT Alcatel-Lucent discussion

P2:

- MTK thinks agreeing on 2 is risky. QC think it is too early to decide this. Huawei agrees, we need evaluations. Intel think we can agree to this, see no concerns.

P6:

- Vodafone wonders if RLC-AM would be kept as today or a modified version. VDF would prefer simplifications. ALU clarifies that the intention is just to cover message loss. VDF wonders which messages, NAS, RRC or other. ALU clarifies that RRC is written to assume that L2 provides lossless delivery. Sony agrees. If we don't have RLC AM then we need something else in RRC. Neul points out that RLC AM comes with more messages. ALU thinks we should focus on the question if L2 should provide assured delivery or not. VDF points out that quite RRC few messages are needed.
- QC wonders what left to implementation means.
- Ericsson would like to know what the impact if for RRC before removing RLC-AM.
- Ericsson suggest that this could be analysed further.
- We will come back to this issue in later meetings.

⇒ **NB-IOT devices only support at most 1 DRB.**

⇒ **There is no motivation to support SRB2. Details are left for stage-3 phase.**

R2-154527 Overall CP/UP Aspects Samsung Electronics Co., Ltd discussion

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- HARQ is the remaining issue, but may be discussed on Thursday.

⇒ **Noted**

R2-154568 Considerations of NB-IOT requirements Nokia Networks other
- Remaining issue is P1.
- RAN2 should investigate signalling optimizations. There seems to be significant support for this.
- Difficult to make formal agreements on the guideline style proposal.

⇒ **Noted**

R2-154833 General L2/L3 impacts due to introduction of NB-IOT feature Intel Corporation discussion
P2
- QC think that TTI etc has not been decided in RAN1 so we need to wait, and we don't need any specific agreements in R2. Ericsson think we need to know the available TB sizes and that we should request this from RAN1. ZTE think we could just wait.
- Intel wonders if the TB sizes can be expected to be similar to eMTC.
- We trust in R1 to do the right thing ..

P3
- Intel explains that the intention is to avoid mobility complexity at cell borders.
- Ericsson points out that MCL is maybe not the best coihce of words as the output power may be different. QC points out that as we have different scenarios this may be difficult.

P4
- Vdf wonders if we can decide the number of coverage classes. MTK clarifies that R4 has looked at RSRP measurements that 2 EC levels can be reasonably supported. QC assumes that R4 need to do the same study for NB-IOT.
- QC thinks we will not get a response anyway as the L1 is not decided.

P5
- Chair wonders if we have other QoS restrictions in general ..

P7:
- This is already agreed in the WID. Neul does not think so, this would lead to complex specifications. Ericsson, Nokia, Docomo, ALU, Sony and LG support this proposal . Huawei think we can wait and decide when we know more. TIM also think that this can be addressed later.
- See discussion on R2-154722.

⇒ **The differentiation of coverage level is beneficial and will be supported; details might need RAN1/4 input.**

⇒ **RAN2 assumes that GBR (QoS) is not supported.**

R2-154514 NB-IOT - Architecture Overview Neul discussion
- Sony wonders why CSG/heNB should not be supported.
- DT thinks that NB-CIOT do not need to support CSG in order to support HeNB. For future compatibility there should be a general method to prevent UEs from selecting particular cells, e.g. broadcast bit ..
- On MBMS, DT supports to not have it, but indicates that there may be a viable use case for multicast for software update. Ericsson agree that there is interest for this.
- Huawei confirms that in GERAN due to lack of time, it was assumed to not support multicast etc in the current release.
- DT want to have the option to support 3GPP network positioning.VDF think we should be careful about the amount of work.

We assume we will not support

⇒ **CSG**

⇒ **Relaying**

⇒ **Dual connectivity**

⇒ **MBMS**

⇒ **Real time services**

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⇒ **in-device coexistence;**

⇒ **RAN assisted WLAN interworking**

⇒ **Support for ProSe Direct Communication and Direct Discovery;**

⇒ **Minimization of Drive Tests (MDT).**

⇒ **no support for CS services and CS fallback;**

R2-154504 NB-IOT - Overview on Reusing of LTE L2/L3 Huawei, Hisilicon, Neul discussion

- Suggest to discuss UP parts only on Thursday.
- Most parts are covered already.
- Huawei proposes to discuss the "reuse" marked proposals. Intel thinks that for security we should wait for SA3, and for transfer of NAS messages we should wait for SA2.
- DT think that we should be open to not have AS security.
- Docomo think that previous agreements are sufficient at the high level.
- Huawei think we need to work on the detailed level.

⇒ **Noted**

R2-154587 Impact due to Gb / S1-Lite Interface choice Sony discussion

Moved here from 7.6.2

- Vodafone thinks that SA2 should be able to decide and that the main concern should be battery consumption. ZTE thinks it is likely that SA2 will decide to support both main proposals. QC and Intel think we should just wait. QC points out that SA2 looks at the whole system in this and this may be the cause for confusion.
- The chair thinks that RAN2 can live with whatever decision SA2 takes, although SA2 should not attempt to decide on RACH details. ZTE is worried about supporting several solutions.

⇒ **We will leave the decision to SA2. No guidance.**

Stage-3 Specifications

R2-154722 Draft Idle Mode specification review for NB-IoTDeutsche Telekom AG, Huawei Technologies Co., Ltd., HiSilicon Technologies Co. Ltd, Neul Limited, Qualcomm Incorporated discussion

- DT explains that the purpose of the document is to discuss how to write stage-3 specifications.
- Docomo thinks that the removals are related to UE capabilities and a new TS is not needed.
- ZTE think we should stick to current specifications. Ericsson agrees.
- Sony are concerned that maintenance will be a lot of work if we have different TSes.
- DT point out that for LTE we copy-pasted a lot from UMTS which was very fast. DT are concerned that creation of Joint TSes will be problematic. NB-IOT is not the same RAT as LTE.
- LG think that if NB-IOT is a different RAT to LTE it might be put into a different specification. RAT is referred to in many specifications. Huawei think that different RATs have fundamental differences in the physical layer.
- QC think we need to raise this to the plenary. DT agrees
- From WID point of view we have no clear decision which direction to go.
- The chair thinks we cannot make further decisions now if to reuse LTE TSes or make new ones, can revisit when we have a clearer view.

⇒ **Noted**

Performance evaluation

R2-154449 Update of battery life evaluation for light S1 architecture ZTE Corporation discussion

- The update is the inclusion of the S1 based interface.
- Conclusion of the paper is that S1-based solution (based on cached UE ctxt) also fulfils the requirements.
- QC think that L1 need to be settled in order to determine battery consumption. ZTE clarifies that L1 assumptions is as discussed in current R1 meeting.

⇒ **Noted**

R2-154452 Exception report latency evaluation for light S1 architecture ZTE Corporation discussion

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- The update is the inclusion of the S1 based interface.
- Conclusion of the paper is that S1-based solution (based on cached UE ctxt) also fulfils the requirements.

⇒ **Noted**

Withdrawn:
R2-154856 NB-IoT - UE considerations QUALCOMM CDMA Technologies discussion

7.16.2 Control Plane

7.16.2.1 System Information

System information contents and principles may be built on eMTC. However for CIOT the bandwidth will be even lower and there might be system configuration parameter differences due to different PHY layer.

Guidelines, MIB, SIB Contents, SI Scheduling Repetitions, SI Update, Value Tag Mechanism, L1 dependencies, Optimizations

R2-154854 System Information for NB-IOT QUALCOMM CDMA Technologies report

- Docomo wonders why we need to restrict the use cases for operators. What functionality to use is anyway up to operators. DT thinks there are substantial differences between eMTC and NB-IOT. QC thinks that we need to reduce optionality. QC think that the limitations of the NB-IOT PHY limits the usefulness of NB-IOT devices. VDF and DT thinks we should have a lean design. Nokia agrees that we need to limit the SI, but think we should continue with specific proposals.
- Docomo wonders how much cost is reduced by supporting optional features (if those are not used). QC thinks that functionality and testing is also a cost.
- Sierra Wireless would like to keep this open.
- QC explains that to get good battery performance we need to reduce/restrict UE wake up time.

⇒ **We assume that RAN2 work with RAN1 regarding lower layer aspects of system information, including SI TBS.**

⇒ **We assume that RAN2 wait for further input from RAN1 regarding physical layer cell parameters.**

⇒ **RAN2 should allow for extension of system information messages for NB-IOT in future releases.**

R2-154867 System information design for NB-IoT NTT DOCOMO, INC. discussion
P2.1

- QC would not like to preclude fixed SIB sizes right now. Intel proposes to agree that we at least support concatenation. Docomo would not like to fix the SIB size as there may be dependency etc to coverage. Ericsson do not see the gain of fixing the SIB size. DT think we should do a clean design for NB-IOTand then later discuss if to eMTC should make alignment with NB-IOT. Huawei agrees.
- Huawei think we cannot make any agreement without first evaluating performance.
- Docomo think that eMTC and NB-IOT has the same objectives and it would in any case make sense to align. NEC agrees.
- Intel thinks we may need to go through all SI IEs and fields.
- Ericsson thinks we could work on the scheduling. LG agrees.
- Docomo thinks that the same (exact same) SI can be delivered to NB-IOT UEs and to eMTC UEs. TIM wonders if NB-IOT and eMTC will have the same PHY. Docomo assumes that PHY is the same. Intel thinks this need to be discussed in RAN1 first.

⇒ **LTE, including eMTC, is used as a starting point for the analysis, for SI. Enhancements will be considered.**

R2-154170 NB-IOT System Information Ericsson discussion
P1

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- Intel wonders if the MIB may be larger. ZTE points out that any bits in MIB are very expensive, and we need to make analysis first. LG agrees. QC point out that we need more info on the size.
- Sierra wireless point out that the value tag may mean different things.
- Neul point out that this has been evaluated in GERAN, and the battery life requirements may not be fulfilled without this.

P2
- Huawei: SIB14 FFS as we haven't decided on Access Control mechanism.
- Intel thinks we need to discuss SIB16 separately.
- LG thinks we don't need this agreement.

P4
- Intel points out that the combining across SI window was due to acquisition time performance. It is not obvious that we need to do parallel combining for NB-IOT.
- Neul thinks that there is no requirements on the time.
- Ericsson explains that the purpose is to faster acquisition time for UEs in good coverage.
- ZTE thinks it is not clear whether this is good.
- Chair believes the essence of this proposal is that reception of multiple SI messages is done in parallel.
- FFS whether SI messages can be combined across multiple SI windows.

P5
- VDF thinks we should not have non-essential SIBs, DT agrees.
- Seems not agreeable.

P6
- VDF agrees we need to make some change. DT think is can be fixed.
- Ericsson assumes there is a default value and a configurable option. Benefit is that this can be changed if the operator chooses to make a lot of SI updates.
- ZTE thinks that a guideline from operators is needed.
- VDF thinks that SI doesn't change often except for ACB.

⇒ **RAN2 should revisit the content of MIB due to the nature of NB-IOT physical layer**

⇒ **We assume that we place the SystemInformationValueTag in NB-IOT MIB to enable fast detection of system information change. This can be revisited.**

⇒ **We will need to change the SI / value tag validity time. Exact value FFS but might be in the order of 24h.**

R2-154515 NB-IOT - Broadcast of System Information Neul discussion
R2-154388 System information impacts due to introduction of NB-IOT feature Intel Corporation discussion
R2-154528 Discussion on System Information Design Samsung Electronics Co., Ltd discussion
Above 3 Tdocs not treated

✉ **Email discussion, SI contents, all relevant SI, excluding parameters that are unknown due to undecided functionality (Intel)**

✉ **Email discussion, SI scheduling, identify and analyse the options (Ericsson)**

7.16.2.2 Paging

Paging principles, Idle mode DRX, determination of paging occasion, other.

Reuse of eMTC and eDRX, Coverage level specific paging, Change of Coverage level, L1 dependencies, Multi-Narrowband, PSM, Further Optimization

R2-154505 NB-IOT - Paging Optimization and Enhancement Huawei, Hisilicon discussion

P1
- QC thinks we need more analysis on the breaking point where PSM vs DRX is more efficient.
- Intel think we can reuse eDRX range up to 40 minutes as a baseline assumption. DT think we should have at least a couple of hours, and also discuss the lower bound, which should be lower than one second.

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- Docomo wonders how the periodic TAU would be set. DT think this should be set in the same range as DRX, and should be possible to set it in the order of 24h. Vodafone think this doesn't need to be related.
- Probably MO delay and MT delay should be comparable.
- Ericsson points out that the lower bound of the paging cycle is dependent on the time needed for repetitions.
- Ericsson wonders if eDRX is prepared for longer cycles. Intel confirms that SFN extension allows up to 2.9h DRX cycle.

P2
- Nokia wonders if the paging then UE specific. Network will do different level of repetition for different coverage levels.
- Intel support this proposal. ZTE support.
- Vodafone points out that paging in general is expensive and that repetition can be very expensive.

P3
- Nokia wonders what happens at mobility. Chair think this depends on the definition of coverage level. Intel think we could have different behaviour for mobile devices.
- Huawei thinks that each change doesn't need to be indicated to the network.
- Asus think we should make assumptions on mobility. Huawei indicates that for enhanced coverage only low mobility is supported.

⇒ **Idle mode DRX cycles up to around 3 hours should be possible to support. The exact cycle length will depend on the physical layer design.**

⇒ **Idle mode DRX cycles down to around one second should be supported. The exact cycle length will depend on the physical layer design. May be revisited due to impacts of repetitions. May be dependent on coverage level.**

⇒ **We assume that we support different paging transmission repetitions for different coverage level.**

✉ **Email discussion to next meeting to indentify and analyse the options for handling change of coverage levels (Huawei)**

R2-154877 Paging in NB-IOTLG Electronics Inc. discussion late

P2
- Qualcomm wonders if there are more parameters. QC also point out that we may have two levels of repetitions, CN repetition.
- Ericsson agrees with the direction.
- On paging repetitions, Intel think we should have the same principles for NB-IOT and eMTC/eDRX. Huawei wonders what are the principles, we should be more specific. Chair think this applies to CN initiated paging. ZTE think this should be about RAN repetition. MTK think we need to tell RAN1 what we need wrt L1 robustness.

⇒ **NB-IoT UE determines the paging occasions to monitor paging message by using UE ID and Frame Number. FFS if we also need other parameter(s).**

- On paging repetitions in long DRX cycles, invite for papers for next meeting.

P6
- Nokia wonders if we can really agree because we don't know how the eNB can know the coverage level. In the GERAN TR it is assumed that coverage class is reported in the RACH. Nokia think that this is different to assumptions for eMTC.

⇒ **RAN2 assumes that the CN node can provide information on the coverage level of the UE, the paging attempt number, and the last known Cell ID, to RAN node in NB-IoT.**

⇒ **RAN2 assumes that eNB forwards the coverage level to the MME. It is FFS how the eNB can know the UE coverage level.**

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R2-154478 NB-IOT Paging and DRX Ericsson discussion
- Ericsson indicates that all except proposal 1 has been already been treated.
- Nokia think we could treat connected mode DRX. Chair would prefer to treat it in another context.

P1:
- Chair wonders if this is not RAN1 responsibility. Ericsson think we could treat P1.
- LG support this proposal.
- Intel think we should wait for L1 progress. Mediatek agrees.
- Cannot agree now. We need more L1 progress.
- Ericsson proposes to send an LS to RAN1. We don't do that now.

⇒ **Noted**

R2-154424 Paging for NB-IoT MediaTek Inc. discussion

P1/P2
- We need to work with RAN1 to have reasonable TB size. We can probably not ask RAN1 for something specific for the moment. We should work further on what would be reasonable for RAN2. Companies can input in RAN1.
- Intel thinks that P2 could be a direction for more details discussions at next meeting.

P3
- QC think we should avoid reading multiple SIBs.
- Intel think we cannot agree on this without further analysis.
- Mtk confirms that the thinking stems from H-SFN solution for LTE.
- LG think we don't need multi-levels.
- Vodafone think we can revisit this when we have progressed further.

P4
- Mtk explains that the purpose is that UE shall not loose paging messages when moving between cells, and that this is from eDRX.
- Huawei explains that this has been discussed also in GERAN and the assumption is to have synchronization between eNBs on 4s level
- Ericsson think we need better understanding.
- DT wonders where this will be defined. This need to be clear. Vodafone think this could be phrased as a likliehood-to-miss-a-page requirement.

P7
- Gemalto wonders if this is a R2 issue. Mtk agrees that this is also a CN issue. Vodafone thinks R2 can work on this. Paging capacity is likely to be bad. A simple solution could be copy pasted from GSM to queue paging requests to be transmitted later in case of blocking.
- QC points out that paging need to be balanced with other channels.

⇒ **Course paging occasion alignment for a UE between eNBs is beneficial when using long DRX cycles for NB-IoT.**

R2-154389 Paging impacts due to introduction of NB-IOT featureIntel Corporation discussion
- P8 has not been treated yet and could be discussed
- Ericsson think we discussed a similar proposal.
- We could think about whether to load share in specific ways when supporting multiple carriers.

⇒ **Noted**

R2-154853 Paging principles for NB-IOT QUALCOMM CDMA Technologies discussion
- SI update indication by paging could be discussed, especially for short DRX cycles. QC think the UE could avoid reading the MIB. Vodafone think that we may have another value tag in MIB. Need to be discussed in context of SI update in general. Papers invited for SI update for next meeting,
  - DT do not see a big motivation for this proposal.

P3
- Qualcomm thinks that paging can be local, in a single cell. MTK wonders how the network can know that a UE is stationary. QC think this could be a capability indication. DT points out that also stationary UEs may change cell. Last known cell can be used in paging

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strategy. Intel hope to discuss this in email discussion. Gemalto think that the knowledge that a UE is in general useful.
- We wait for more specific proposals.
- **Noted**

R2-154454 Discussion on paging procedure for NB-IoTZTE Corporation discussion
- Everything has been covered

⇒ **Noted.**

R2-154507 NB-IOT - Design of Message Reading Indicator Huawei, Hisilicon discussion
- LG wonders how much energy can be saved. Huawei don't have a number but think that for UEs in bad coverage there will b e significant benefits.
- ZTE thinks that this indicator is a fixed overhead. Huawei confirms but think that this IE is small. ZTE think that this proposal involves MIB reading every time, which might sometimes be avoided otherwise. Mediatek also have some doubts whether this proposal will bring gain.
- Nokia wonders what is the expected R2 impact. Huawei think that the paging procedure is different.
- Samsung think that reading the message indicator is a burden. Huawei anyway think that MIB is read at paging.
- Intel think this need to be discussed with RAN1 as optimizations are also discussed there. Ericsson agrees.
- Interdigital wonders what happens if the UE changes cell. Huawei think that the indicator works the same way in all cells.
- Discussion on UE power consumption at "false paging" can continue.

⇒ **Noted**

R2-154529 Discussion on Paging Mechanism Samsung Electronics Co., Ltd discussion
- Focus on false paging.
- Samsung think that we need more analysis in order to make decisions.
- Huawei wonders if the problem or solution needs more analysis. Samsung simulations show that with long eDRX the problem is not so severe.

⇒ **Noted**

Withdrawn:
R2-154506 NB-IOT - Discussion on Paging Occasion Huawei, Hisilicon discussion

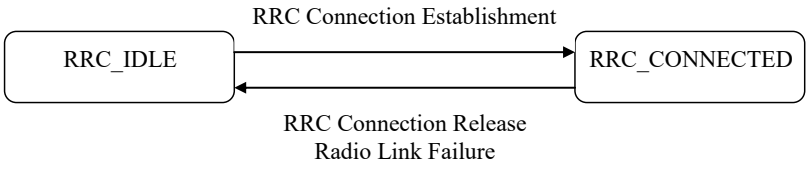
7.16.2.3 Other

What parts of RRC are applicable, need modification etc? Reduction of RRC signaling that is Not directly related to SA2 work on signaling reduction at small data transmission (which will be treated later, when SA2 have taken decisions).

RRC included and excluded functionality, Idle Mode included and excluded functionality, Mobility, Network Sharing, Cell Barring, Access Control / restrictions

R2-154390 RRC impacts due to introduction of NB-IOT feature Intel Corporation discussion
P1
- Chair think that this state machine is a simplified one
- ZTE thinks that this means that we don't have RRC reestablishment. Ericsson thinks we should keep the possibility to have RRC re-establishment. Nokia also think reestablishment can be useful.
- Huawei think this simplified version can be used. LG supports this. DT also support this. QC supports this.

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⇒ **LTE RRC state machine as above is utilized as a baseline for NB-IOT feature. FFS if RRC connection re-establishment is needed.**

R2-154516 NB-IOT - RRC Layer Overview Neul discussion

⇒ **Noted**

R2-154801 Control Plane Aspects of NB-IOT Qualcomm Incorporated discussion

⇒ **Noted**

R2-154774 Applicability of RRC for NB-IoT Alcatel-Lucent discussion

RRC connection reconfiguration
- Neul explains that this is assumed to be only used for the initial configuration.
- Neul explains that the RRC connection is assumed to be very short-lived.

RRC connection reconfiguration in other cases than the initial configuration
- Nokia thinks that there is no additional pain to support reconfiguration if we support initial configuration. Ericsson agrees with Nokia. Neul wonders what to reconfigure. QC do not see a need for reconfiguration. ZTE agrees that for very short lives connections we don't need RRC connection reconfiguration.
- Vodafone thinks that there is complexity in reconfiguration, e.g. start stop. ALU points out that there is no start/stop time complexity in LTE. ALU points out that this is dependent on SA2 decision as they may decide to have very long lived RRC connection.
- LG think we could optimize further to have static stored or specified configurations. DT supports this.
- Sony thinks that reconfiguration could be useful and that a bigger complexity could be not supporting assured message delivery.
- Interdigital point out that physical layer parameters may be different in different operation modes (in band, guard band, StA).

RRC connection reestablishment
- See above discussion.

Counter Check
- DT think that counter check is only for DRB. IF SA2 selects control plane solution, counter check is anyway not applicable.
- Ericsson think we should ask SA3 if we need this. Vodafone agrees.

⇒ **RAN2 assumes counter check is not needed. Will ask SA3 for verification.**

RRC connection release
- Proposal to have two simplifications, a) remove the possibility for parameters, b) introduce a timer triggered RRC connection release in addition to explicit RRC connection release message.

a)
- DT want to keep redirection.
- to be discussed in the context of mobility.

b)
- DT is concerned about desynchronization of states.
- Vodafone and LG support the proposal.
- Nokia wonders when the timer would start. Can it be ensured that the timer starts at the time in the UE and in the network, e.g. in bad coverage.

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- Docomo have concerns on complexity and thinks that having two options is not a good way for low cost UEs.
- Can be discussed further.

MFBI
- RAN2 cannot decide. There could be a need. Could input to R4.

Stage-3
- QC think we need to go further than the present document to really see where to go. Vodafone think we could make two alternative CRs and compare. ALU think the main factor is how similar or different to LTE the common sections would be (common for both LTE and NB-LTE). DT wonder how to handle timers and constants if we integrate.
- Encourage WI rapporteurs to input material so that RAN2 can develop an opinion for next meeting. Input should be based on the upcoming SA2 decisions.

LS to SA3 (cc SA2): Draft LS on Security aspects of NB-IOT in R2-154931 (DT)
- Ask if Counter Check is needed.

R2-154931 LS on Security aspects of NB-IOT (to: SA3; cc: SA2; contact: Deutsche Telekom AG)
Deutsche Telekom AG LS out

⇒ **Postpone**

R2-154878 RRC Connection Control in NB-IOT LG Electronics Inc. discussion Late

⇒ **Not treated**

R2-154720 Principles for NB-IoT: GERAN agreed Operator requirements on network sharing, cell barring and access control Deutsche Telekom AG discussion

Moved here from 7.6.1
- DT indicates that the intention is not to specify Stage-3 IEs.

P8
- Ericsson wonders if we can use the current barring to keep legacy UEs out and define new behaviour for new UEs. DT think this is not clean design.

P9
- LG wonders if Access Control need to be verified by SA1.
- Postponed: In order to allow a future specific usage of cells, a “cell reserved for future use” should be supported by the NB-IoT system with the default that UE do not select or reselect such as cell.

⇒ **The “MOCN” concept of LTE should be supported in NB-IoT by allowing transmission of more than one PLMN Id on the BCCH. Also “GWCN” shall be supported for NB-IoT system.**

⇒ **Network sharing support is mandatory for NB-IoT UEs.**

⇒ **The multiple PLMN list on the BCCH should use a compact coding as in LTE allowing a significant reduction of bits required to transmit the required PLMN id information.**

⇒ **The selected PLMN by the UE is reported by using a “pointer” to the transmission order on the BCCH, as in LTE.**

⇒ **The cell baring concept of LTE should be supported.**

⇒ **The “cell reserved for operator use” concept of LTE should be supported.**

⇒ **The Access Control concept of NB-IoT should be based on the availability of Access Classes in the SIM/UICC like in GSM/UMTS/LTE.**

R2-154517 NB-IOT - Idle Mode Procedure Overview Neul discussion
Priority based reselection
- DT is fine to remove it, if we can keep redirection. Ericsson agrees but sees an alternative that we can relax the measurement requirements.
- Sony thinks that priority base reselection consumes less power. Neul does not agree.
- QC thinks that in case we don’t want the UE to measure often and QC does not see the need for priority based reselection.

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- Not ready for decision at this meeting.
- Invite for papers to identify scenarios (e.g. stationary deep indoor, mobile tracking sparse update, mobile tracking frequent update, inter-operator inter-frequency), what we want to achieve with idle mode mobility and possible solutions.

⇒ **"Inter-frequency" denotes a scenario where we have more than one cell on different 180 kHz NB carrier, regardless other character of the deployment. FFS if this definition need to be updated if RAN1 introduces frequency hopping etc.**

⇒ **RAN2 assume that there is no need to support limited service state or emergency call.**

⇒ **We will not support speed dependent scaling of mobility parameters or mobility history.**

R2-154530 Cell Selection and Reselection for NB-IOT Samsung Electronics Co., Ltd discussion
- Already covered

⇒ **Noted**

R2-154508 NB-IOT - Cell Selection/Reselection and Measurement Huawei, Hisilicon discussion
P5: we don't support UE specific cell reselection configuration parameters.
- DT think we should keep dedicated priorites IF we decide to keep priority base reselction.
- Ericsson wonders what is the motivation. Neul think that this is about complexity and signalling.
- QC would like to work bottom up with a fuller understanding.
- We postpone this discussion to next meeting.

⇒ **Noted**

R2-154477 NB-IOT Mobility and measurements Ericsson discussion
- Already covered
- An important point is that UEs in enhanced coverage should try to get back to normal coverage.

P6
- Huawei think that it is difficult to know the coverage class before reselection. Intel understands that the intention is that the UE shall use cells where it can operate in normal coverage rather than cells where UE uses enhanced coverage.
- A NB-IOT device should try to select/re-select a frequency in which it can operate in normal coverage, compared to a frequency where it has to use coverage enhancements.
- Intention seems to be ok, but need to be put into context of the selected mobility mechanisms.

⇒ **Noted**

7.16.3 User Plane

7.16.3.1 Random Access

Specification of the RACH procedure.

Use cases for RACH, RACH with or without preamble

R2-154540 Random Access procedure for Narrowband IOT ASUSTEK COMPUTER (SHANGHAI) discussion
- Mediatek points out that we discussed coverage level yesterday.
- Intel would prefer to capture which cases are not applicable compared to LTE.
- LG think that UE may be in Idle when data arrives.
- DT think we might support positioning.
- Samsung and LG proposes to not discuss this now.

⇒ **Noted**

R2-154855 Random Access for NB-IOT QUALCOMM CDMA Technologies discussion

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- DT think that contention free access maybe comes with additional overhead, but anyway see a need for two types of contentions based RACH, with different contention level.
- Ericsson points out that contention free RACH is also used for DL data arrival. LG think that this is related to the need for UL TA.
- Huawei also think there may be a need for contention free RACH. We should not exclude this now.
- Vodafone points out that contention free RACH is just an optimization and that contention based RACH can be used for everything. Samsung think that contention free RACH is not needed.

⇒ **Contention-based random access should be supported for NB-IOT.**

R2-154531 Discussion on Random Access Procedure Samsung Electronics Co., Ltd discussion
- Samsung explains that more flexibility may be needed in addition to power ramping. LG think we should wait for eMTC.
- Gemalto wonders if the starting point of power ramping depends on coverage level. Samsungs intention is to discuss which kind of ramping is better.
- QC thinks that we should not ramp power, because it may be wasteful, at most one RACH power per coverage level. Vodafone agrees.
- RACH power or resource / repetition ramping is FFS but is currently discussed in RAN1.

⇒ **We assume that RACH configuration may be different per coverage level.**

R2-154092 NB-IOT Random Access Ericsson discussion
- LG asks what is the difference to LTE RACH. Ericsson point out tha the L1 may be different.

- **Noted**

R2-154509 NB-IOT - Random Access Process Huawei, Hisilicon discussion
- LG wonders which channel is used for Random Access Request. Huawei responds that PUSCH-similar resources allocated specifically for RACH can be used
- ZTE wonders if the purpose is still to use a 4 step procedure. Huawei confirms.
- Ericsson wonders what is the non-contention based procedure. Huawei explains that there may be collisions but no contention.
- QC wonders if the non-contention procedure assumes CRNTI and how much it would be used. Huawei confirms that it assumes the CRNTI and think this can be used for UL data arrival, coverage class change, Recovery from RLF. QC doubts that this would be useful as the connection may be very short. Vodafone think this depends on SA2.
- Samsung think the performance will depend on the collision/contention level, and that preamble RACH may perform better in high collision/contention. Huawei points out that performance has been evaluated in GERAN and fullfills the requirements.

- **Noted**

R2-154462 Random Access Procedure for NB-IoT MediaTek Inc. discussion
- Already covered

DISCUSSION
- Vodafone points out that collision probability depends on amount of resources allocated
- Sony wonders if there is power ramping etc for message RACH. Huawei confirms that there need to be something equivalent. Sony think that retransmissions are expensive
- ZTE points out that simulations have been provided showing that preamble RACH fullfils the requirements. ZTE think that what we have today works and that we should close the discussion.
- Huawei thinks that the preamble consumes a lot of resources.
- LG wonders what is the problem with current LTE RACH? Huawei think the message RACH is more battery efficient. LG think that contention based PUSCH is inefficient due to the low efficiency at collision.

⇒ **RAN2 will wait for RAN1 with respect to message RACH vs. preamble RACH**

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7.16.3.2 Other

Do we need RLC AM? PDCP, can it be used as is? Segmentation, concatenation etc – can we reuse the current principles. DRX mechanisms. BSR – support for UL scheduling etc

RLC inclusions exclusions, PDCP inclusions exclusions, MAC inclusions exclusions, HARQ, RLC AM, Header compression, DRX

R2-154453 Discussion on LTE UP protocol for NB-IoT ZTE Corporation discussion

- Vodafone thinks that the size of around 2000 Bytes is a file size and that NAS has requirements for 8000 Bytes. This would assume TCP/IP.
- Ericsson thinks that 1500 Bytes is a natural MTU for PDCP.
- DT thinks that the main impact is on UE memory.
- Cisco thinks that we cannot make assumptions now as we need to support non-IP data.
- LG points out that current max PDCP SDU size is 8188 bytes.
- FFS whether we need to change, what max SDU size to assume for L2. This may have impact on RLC SN number size.
- Vodafone thinks Integrity protection for data may be required for IOT. This would be a new requirement if applied to DRB.
- Vodafone thinks that PDCP header size should be max 1 octet and it would be good to have some spare bits ..
- Docomo think we might need RLC AM. Qualcomm agrees that this is premature.
- The proposal “UM mode with SN=5 bits or SN=10 bits are supported for UM mode” was based on traffic calculations in the first chapter. LG think that the calculation is incorrect.
- LG think that connected mode DRX is not needed as the awake time is anyway short.
- Qualcomm wonders what cycles we need to support?
- DT wonders why SPS is not needed? A long cycle SPS would be beneficial. Samsung agrees.

⇒ **Whether RLC AM is required for DRBs is FFS.**

⇒ **RAN2 assume that the PDCP SN size is 7 bits (or less).**

The lists below are not intended to preclude optimizations.

PDCP

Assume that we need to support

⇒ **transfer of data (user plane or control plane)**

⇒ **header compression and decompression of IP data flows using the ROHC protocol (Dep on SA2)**

⇒ **Ciphering and Integrity Protection (Dep on SA3/SA2)**

⇒ **Ciphering and deciphering (Dep on SA3/SA2)**

Assume that we may need to support

⇒ **Timer-based SDU discard in uplink**

Assume that we don’t need to support

⇒ **In-sequence delivery of upper layer PDUs at PDCP re-establishment procedure for RLC AM (Dep on if we have RRC reestablishment and RLC-AM).**

⇒ **Duplicate detection and duplicate discarding of lower layer SDUs at PDCP re-establishment procedure for RLC AM (Dep on if we have RRC reestablishment and RLC-AM).**

⇒ **Retransmission of PDCP SDUs at handover for RLC AM**

⇒ **for split bearers, routing and reordering**

⇒ **PDCP status report**

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RLC
Assume that we need to support

⇒ **Transfer of upper layer PDUs**

⇒ **Concatenation, segmentation and reassembly of RLC SDUs**

Assume that we do not need to support

⇒ **Reordering of RLC data PDUs (Dep on HARQ)**

⇒ **Duplicate detection (Dep on HARQ)**

⇒ **RLC re-establishment (FFS)**

MAC
Assume that we need to support

⇒ **RACH procedure**

⇒ **Mapping between logical channels and transport channels (FFS)**

⇒ **Multiplexing/De-multiplexing**

⇒ **Scheduling**

⇒ **Priority handling between logical channels of one UE (FFS the extent of this)**

⇒ **Discontinuous Reception (DRX) (FFS to what extent)**

⇒ **BSR report**

⇒ **DL HARQ**

⇒ **UL HARQ**

Assume that we do NOT need to support

⇒ **MBMS service**

⇒ **Semi-Persistent Scheduling (the current SPS)**

⇒ **Dedicated Scheduling request**

⇒ **Activation / deactivation**

R2-154169 NB-IOT User plane Ericsson discussion

⇒ **We assume we need SRB1**

⇒ **We assume we need SRB0. Dep on modelling we may revisit, we need a request with signalling information in any case.**

⇒ **We support 1 HARQ process for dedicated transmissions (1 for UL and 1 for DL).**

R2-154391 User plane impacts due to introduction of NB-IOT feature Intel Corporation discussion
- Everything covered

⇒ **Noted**

R2-154510 NB-IOT - RLC Layer Functions Huawei, Hisilicon discussion
- Everything covered

⇒ **Noted**

R2-154511 NB-IOT - PDCP Layer Functions Huawei, Hisilicon discussion
- According to already taken decisions, Any procedures related to the following is assumed not supported
  - Sidelink
  - Dual connectivity

⇒ **Noted**

R2-154518 NB-IOT - MAC Layer Overview Neul discussion

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- Already covered

⇒ **Noted**

R2-154519 NB-IOT - HARQ Overview Neul discussion
- Ericsson think we may need to discuss whether we support adaptive or non-adaptive HARQ. Neul assumes only adaptive HARQ. Ericsson agrees. For eMTC this is not settled yet. LG think we should follow the decision made for eMTC.
- We don't decide now, but may likely follow the decision for eMTC.

⇒ **Noted**

R2-154866 L2 protocol analysis for NB-IoT NTT DOCOMO, INC. discussion
- Already covered

⇒ **Noted**

R2-154802 User plane aspects of NB-IOT Qualcomm Incorporated discussion
- Already covered

⇒ **Noted**

R2-154797 Considerations on User Plane functions for NB-IOT LG Electronics Inc. discussion
- Already covered

⇒ **Noted**

R2-154520 NB-IOT - DRX in RRC_CONNECTED Mode Neul discussion
- Neul explains that one target is to reduce the signalling and reduce the time the UE is awake.
- LG think that the current DRX is highly optimized and see no need for a new mechanism. NEC agrees and wonders what is the problem with the current mechanism.
- Neul do not think this is a new mechanism.
- Intel think the current DRX is efficient but could consider to have a more fixed configuration if we need to reduce signalling.
- Nokia think that the connection anyway needs to be configured. Docomo agrees.

P5
- Ericsson thinks that DRX start offset is beneficial. Ericsson do not see benefits in not supporting inactv timer or having fixed on duration timer.
- Neul explains that UE wake up will not coincide for many UEs.

⇒ **Significant support to reuse the current LTE DRX as specified in 36.321. This does not preclude signalling optimization.**

⇒ **RAN2 assumes that there is only need for one DRX cycle, "long DRX".**

R2-154532 Design Considerations on User Plane Samsung Electronics Co., Ltd discussion

⇒ **postpone**

R2-154513 NB-IOT - Coverage Class Decision and Adaptation Huawei, Hisilicon discussion
- covered by email discussion

⇒ **noted**

R2-154512 NB-IOT - Scheduling Design Huawei, Hisilicon discussion
- Only RAN1 aspects

⇒ **noted**

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Annex K: History

Document history		
Date	**TSG RAN WG2 Tdoc**	**Subject**
28.09.2015	-	Skeleton report for RAN WG2 #91bis provided before the meeting
30.09.2015	-	Update 1 of skeleton report for RAN WG2 #91bis provided before the meeting
03.10.2015	-	Update 2 of skeleton report for RAN WG2 #91bis provided before the meeting
12.10.2015	-	Draft report v0.1 for RAN WG2 #91bis provided after the meeting

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
x	x	Yes, No	withdrawn, not treated, noted, revised, endorsed, agreed, postponed	Late: request/ submission after 26.09.15 9:00am CEST	R2-15xxxx	-	-	agenda, report, LS in, LS out, CR, pCR (text proposal), draftCR (running CR), draft TR (technical report), draft TS (technical specification), Discussion, other			for CRs: No CR number allocation in bis meeting for LSs: linking between Tdocs				-	acronym		-		especially for problems in the Tdoc allocation
02.1	General: Approval of the agenda	Yes	approved		R2-154001	Proposed agenda for RAN2 #91bis Malmö, Sweden, 5.10.-9.10.2015	Intel (RAN2 Chairman)	agenda												
02.2	General: Approval of the report of the previous meeting	Yes	revised		R2-154002	Draft report of RAN2 RAN2 #91, Beijing, China, 24.8 - 28.8.2015	ETSI MCC	report										R2-154031		
02.4	General: Others	Yes	not treated		R2-154003	3GPP TSG RAN WG2 compendium v29.0 (status after RAN #69)	ETSI Secretariat	other												
07.05	LTE Rel-13: WI: ProSe enhancements	Yes	noted		R2-154004	Reply LS to S2-152699 = R2-153034 on ProSe coarse proximity estimation based on path loss (R1-154871; contact: Intel)	RAN1	LS in						cc: RAN2; no reply answer	Rel-13	eProSe			R1-154871	moved from 3.2 to 7.5
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-154005	LS on eD2D ProSe Per Packet Priority (R1-154876; contact: Qualcomm)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	LTE_eD2D_Prox-Core			R1-154876	moved from 3.2 to 7.5.4
07.05	LTE Rel-13: WI: ProSe enhancements	Yes	noted		R2-154006	LS on RAN1 agreements at RAN1#82 (R1-155009; contact: Qualcomm)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	LTE_eD2D_Prox-Core			R1-155009	moved from 3.2 to 7.5
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	noted		R2-154007	LS on RAN1 agreements on CA Enhancement Beyond 5 Carriers (R1-155011; contact: Nokia Networks)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	LTE_CA_enh_b5C-Core			R1-155011	moved from 3.2 to 7.2.1
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	noted		R2-154008	LS on traffic model assumption in LTE-based V2X (R1-155014; contact: LGE)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	FS_LTE_V2X			R1-155014	moved from 3.2 to 7.11
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements	Yes	noted		R2-154009	LS on UE based timing offset reporting for DC enhancement (R4-154844; contact: NTT DOCOMO)	RAN4	LS in						to: RAN2; reply LS provided in R2-154911	Rel-13	LTE_dualC_enh-Core			R4-154844	moved from 3.2 to 7.8
07.05	LTE Rel-13: WI: ProSe enhancements	Yes	noted		R2-154010	Reply LS to R1-153553 = R2-152020 on Sidelink measurements for relay UE selection (R4-155129; contact: Qualcomm)	RAN4	LS in						cc: RAN2; no reply answer	Rel-13	LTE_eD2D_Prox-Core			R4-155129	moved from 3.2 to 7.5
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	noted		R2-154011	LS on activation time for PUCCH SCell (R4-155134; contact: NTT DOCOMO)	RAN4	LS in						to: RAN2; no reply answer	Rel-13	LTE_CA_enh_b5C-Core			R4-155134	moved from 3.2 to 7.2.1
03.2	LSin: LTE relevance	Yes	noted		R2-154012	LS on Pcell specification changes (R4-155397; contact: Vodafone)	RAN4	LS in						to: RAN2; no reply answer					R4-155397	
11.06	UTRA Rel-13: WI: HSPA Dual-Band UL carrier aggregation	Yes	noted		R2-154013	LS to RAN1, RAN2 and RAN3 on HSPA DB UL CA agreements (R4-155430; contact: Qualcomm)	RAN4	LS in						to: RAN2; no reply answer					R4-155430	moved from 3.3 to 11.6
03.2	LSin: LTE relevance	Yes	noted		R2-154014	LS on features with an FGI bit dependency from an earlier release (R5-154052; contact: Ericsson)	RAN5	LS in						to: RAN2; reply LS provided in R2-155005	Rel-10	TEI10			R5-154052	
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	noted		R2-154015	LS on New WIon LTE-WLAN RAN Level Integration supporting legacy WLAN (RP-151623; contact: Alcatel-Lucent)	RAN	LS in						cc: RAN2; no reply answer	Rel-13				RP-151623	moved from 3.2 to 7.15
03.2	LSin: LTE relevance	Yes	noted		R2-154016	LS on MBMS_enh conclusions (S2-152964; contact: Samsung)	SA2	LS in						cc: RAN2; no reply answer	Rel-13	MBMS_enh			S2-152964	
07.06.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Organizational	Yes	noted		R2-154017	reply LS to R2-152915 on authentication and encryption between UE and WLAN for aggregation (S3-152085; contact: Huawei)	SA3	LS in						to: RAN2; no reply answer	Rel-13	LTE_WLAN_radio-Core			S3-152085	moved from 3.2 to 7.6.1
03.2	LSin: LTE relevance	Yes	noted		R2-154018	Response LS to C1-152403 = R2-153004 on proposed method of restricting access to IOPS cells (S3-152097; contact: General Dynamics UK Limited)	SA3	LS in						cc: RAN2; no reply answer	Rel-13	FS_IOPS_Sec			S3-152097	
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted		R2-154019	LS on QoS for EVS-VBR Codec Operation (S4-151160; contact: Qualcomm)	SA4	LS in						to: RAN2; no reply answer	Rel-13	EVS_codec, QOSE2EMTSI			S4-151160	moved from 3.3 to 3.1
03.2	LSin: LTE relevance	Yes	noted		R2-154020	Reply LS R3-151316 = R2-153016 on RAN Sharing Enhancements for LTE (S5-154454; contact: Nokia Networks)	SA5	LS in						cc: RAN2; no reply answer		OAM13			S5-154454	
03.2	LSin: LTE relevance	Yes	noted		R2-154021	LS on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (SP-150574; contact: Samsung)	SA	LS in						to: RAN2; reply LS postponed to the next meeting	Rel-13	ECSRA_LAA			SP-150574	
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-154022	Reply LS to R2-151785 on a new measurement quantity for Multicarrier Load Distribution (R4-155130; contact: China Mobile)	RAN4	LS in						to: RAN2; reply LS provided in R2-155004	Rel-13	LTE_MC_load-Core			R4-155130	moved from 3.1 to 7.7
03.2	LSin: LTE relevance	Yes	noted		R2-154023	LS on proposed requirements for carrier Wi-Fi networks (Wifi_Alliance_LS_150818; contact: Wifi Alliance staff)	Wifi Alliance Operator Marketing Task Group	LS in						no reply answer						
07.05	LTE Rel-13: WI: ProSe enhancements	Yes	not treated	late	R2-154024	LS on RRC Parameters for eD2D (R1-154883; contact: Qualcomm)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	LTE_eD2D_Prox-Core			R1-154883	moved from 3.2 to 7.5
03.2	LSin: LTE relevance	Yes	noted	late	R2-154025	LS on EB/FD-MIMO signalling (R1-154884; contact: Nokia Networks)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	LTE_EBF_FDMIMO-Core			R1-154884	

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted	late	R2-154026	LS on RRC parameters for LTE eMTC (R1-154885; contact: Ericsson)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	LTE_MTCe2_L1-Core			R1-154885	moved from 3.2 to 7.4.1
03.1	LSin: Joint UMTS/LTE relevance	Yes	noted	late	R2-154027	LS on Draft CRs for Improved end-to-end QoS Enhancements for MTSI (S4-AHM315; contact: Ericsson)	SA4	LS in						to: RAN2; no reply answer	Rel-13	QOSE2EMTSI			S4-AHM315	
07.01.1	LTE Rel-13: WI: Licensed-Assisted Access using LTE	Yes	noted	late	R2-154028	LS on LAA DL LBT Priority Classes (R1-156131; contact: Ericsson)	RAN1	LS in						to: RAN2; no reply answer	Rel-13	LTE_LAA-Core			R1-156131	
03.2	LSin: LTE relevance	Yes	noted	late	R2-154029	LS on introduction of new TBS in Rel-12 (R1-156111; contact: NTT DOCOMO)	RAN1	LS in						to: RAN2; no reply answer	Rel-12				R1-156111	
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	noted	late	R2-154030	LS on RAN3 agreement on DC enhancement for LTE (R3-152269; contact: Samsung)	RAN3	LS in						to: RAN2; no reply answer	Rel-13	LTE_dualC_ext-Core			R3-152269	moved from 3.2 to 7.8.1
02.2	General: Approval of the report of the previous meeting	Yes	revised		R2-154031	Draft report of RAN2 RAN2 #91, Beijing, China, 24.8 - 28.8.2015	ETSI MCC	report									R2-154002	R2-154032		
02.2	General: Approval of the report of the previous meeting	Yes	approved		R2-154032	Report of RAN2 RAN2 #91, Beijing, China, 24.8 - 28.8.2015	ETSI MCC	report									R2-154031			
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-154033	Restricting Unattended/Background Data Traffic	Verizon, Alcatel-Lucent, Ericsson, MediaTek, Qualcomm	discussion							Rel-13	TEI13				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154034	Discussions on IP based Solutions for LWA UP	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	revised		R2-154035	Discussion and Comparison of LWA UP Architecture Options	CATT, Fujitsu, ZTE, CATR	discussion							Rel-13	LTE_WLAN_radio-Core		R2-154957		
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154036	Discussion on WLAN QoS Provision in LWA	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154037	Discussion on WLAN Connection Failure Detection in LWA	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	revised		R2-154038	Corrections on sidelink related description in TS 36.300	Huawei, HiSilicon	draftCR	36.300	12.7.0			F		Rel-12	LTE_D2D_Prox-Core		R2-154973		
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	not treated		R2-154039	Corrections on sidelink related description in TS 36.300	Huawei, HiSilicon	draftCR	36.300	13.1.0			A		Rel-13	LTE_D2D_Prox-Core				wrong spec version number used in CR cover: it should be 13.1.0
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	not pursued		R2-154040	Corrections on sidelink terminologies in TS 36.302	Huawei, HiSilicon	draftCR	36.302	12.5.0			F		Rel-12	LTE_D2D_Prox-Core				
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-154041	Definitions of sidelink terminologies in TS 36.306	Huawei, HiSilicon	draftCR	36.306	12.6.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_D2D_Prox-Core				
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	revised		R2-154042	Corrections for sidelink in TS 36.321	Huawei, HiSilicon	draftCR	36.321	12.7.0			F		Rel-12	LTE_D2D_Prox-Core		R2-154903		
07.18	LTE Rel-13: LTE TEI13 enhancements	No	withdrawn		R2-154043	Enhanced contention resolution scheme for ProSe	Huawei, HiSilicon	discussion							Rel-13	LTE_D2D_Prox-Core				
07.18	LTE Rel-13: LTE TEI13 enhancements	No	withdrawn		R2-154044	Enhanced contention resolution scheme for ProSe	Huawei, HiSilicon	draftCR	36.321	12.7.0					Rel-13	LTE_D2D_Prox-Core				
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	noted		R2-154045	Discussion on relay initiation and relay discovery	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154046	Consideration on relay (re-)selection and resource allocation	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154047	Consideration on gap configuration and UE capabilities	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-154048	Discussion on ProSe Discovery in Partial and Outside Network Coverage	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.18	LTE Rel-13: LTE TEI13 enhancements	No	withdrawn		R2-154049	RACH contention resoultuion	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154050	Mapping between PPP and LCG ID	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154051	Priorization for mode 2 resource allocation	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154052	Construction of the Sidelink BSR MAC CE	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	No	withdrawn		R2-154053	DL measurement and synchronization reference cell	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	No	withdrawn		R2-154054	Correction on MAC header for SL-SCH	CATT	CR	36.321	12.7.0			F		Rel-12	LTE_D2D_Prox-Core				CR will not be treated in this bis meeting
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154055	Considerations on Layer-2 ID collision	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-154056	RAN2 Aspects of ProSe Discovery in Partial & OOC	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154057	Remaining Issues: Gap for Discovery Reception	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154058	Remaining Issues: Gap for Discovery Transmission	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-154059	Remaining Issues: Inter Carrier Discovery	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154060	Handling Collisions between Discovery & Communication	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	noted		R2-154061	MAC PDU Addressing for Communication with UE-to-Network Relay	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154062	Priority Handling for D2D Communication	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154063	Resource Allocation Aspects for UE-to-Network Relay	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154064	Sidelink BSR for Unicast	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154065	Discussion on C-plane for LWA	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	revised		R2-154066	Considerations on User Preferences	CATT	discussion							Rel-13	LTE_WLAN_radio-Core		R2-154880		
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154067	Discussion on configuration of WLAN mobility set	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154068	Discussion on mobility procedures of LWA	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154069	Flow Control for LWA	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154070	Procedures of LTE-WLAN Interworking Enhancements	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154071	RRM Measurements for LWA and LWI	CATT	discussion							Rel-13	LTE_WLAN_radio-Core				
11.01.7	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	noted		R2-154072	Latency reduction for uplink signalling	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core				UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	noted		R2-154073	Further considerations on seamless transition from URA PCH	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core				UMTS
10.1	UTRA Rel-12: WI: Further EUL Enhancements	Yes	noted		R2-154074	Group based access control with seamless transition from CELL_PCH	Nokia Networks	discussion							Rel-12	EDCH_enh-Core				UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-154075	Sync error correction for extended DRX	Nokia Networks	discussion							Rel-13	UTRA_SDATA_POWSAV-Core				UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	No	withdrawn		R2-154076	Further considerations on seamless transition from URA_PCH	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core				UMTS
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154077	the issues on the SIB18 change of the iner-carrier	Beijing Xinwei Telecom Techn.	discussion							Rel-13	LTE_eD2D_Prox-Core				ProSe
07.09.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-154078	the network capacity issues with the C-eDRX	Beijing Xinwei Telecom Techn.	discussion							Rel-13	LTE_extDRX-Core				eDRX
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154079	Considerations on the open issues for SIB transmission	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154080	Further considerations on paging for coverage enhancement operation	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154081	Considerations on inter-frequency cell reselection priorities for EC mode	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154082	Random Access considerations for LC-MTC	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	not treated		R2-154083	Considerations on Enhanced QoS Verification Use Case	CATT	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	postponed		R2-154084	Enhanced Coverage Optimization with eICIC	CATT	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	not treated		R2-154085	Draft LS on Enhanced Coverage Optimization with eICIC	CATT	LS out							Rel-13	LTE_eMDT2-Core				new WI code added
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154086	WLAN Activation/Deact during LTE-WLAN aggregation	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154087	Inactivity reporting in enhanced LTE-WLAN interworking	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154088	(Temporary) loss of WLAN coverage in LWA	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154089	LTE handover during LTE-WLAN aggregation	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154090	Handling of WLAN UE Capability & User Preferences	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core				
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	not treated		R2-154091	On WiFi Positioning	TruePosition Inc.	discussion							Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.16.3.1	LTE Rel-13: WI: Narrowband IOT: User Plane: Random Access	Yes	noted		R2-154092	NB-IOT Random Access	Ericsson	discussion							Rel-13	NB_IOT-Core				new WI code added
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-154093	Considerations on EVS CS RABs and configuration parameters	Qualcomm Incorporated	discussion							Rel-13	EVSoCS_UTRAN-Core				
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-154094	Examples of EVS CS RABs	Qualcomm Incorporated	discussion							Rel-13	EVSoCS_UTRAN-Core				
11.06	UTRA Rel-13: WI: HSPA Dual-Band UL carrier aggregation	Yes	noted		R2-154095	Signalling changes due to the introduction of DB-DC-HSUPA	Qualcomm Incorporated	discussion							Rel-13	HSUPA_DB_MC-Core				
11.06	UTRA Rel-13: WI: HSPA Dual-Band UL carrier aggregation	Yes	noted		R2-154096	Considerations on DB-DC-HSUPA power and data allocation rules	Qualcomm Incorporated	discussion							Rel-13	HSUPA_DB_MC-Core				
11.06	UTRA Rel-13: WI: HSPA Dual-Band UL carrier aggregation	No	withdrawn		R2-154097	Other considerations on DB-DC-HSUPA	Qualcomm Incorporated	discussion							Rel-13	HSUPA_DB_MC-Core				
08	UTRA Release 10 and earlier releases	Yes	agreed		R2-154098	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	draftCR	25.302	10.2.0			F	in principle agreed in RAN2#91bis	Rel-10	RANimp-DC_HSUPA, 4C_HSDPA				
09	UTRA Release 11	Yes	noted		R2-154099	Clarification for configuring CQI and HARQ A/N repetition with Multiflow	Nokia Networks	discussion							Rel-11	HSDPA_MFTX				
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	noted		R2-154100	Retrievable configurations for CELL/URA_PCH	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core				
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	noted		R2-154101	Alternative view on RNTI space extension	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core				
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	not treated		R2-154102	Further analysis of solutions for extending the RNTI space	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core				
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Autonomous state transitions	Yes	revised		R2-154103	Initial considerations for the autonomous state transition	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core		R2-154881		
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	noted		R2-154104	Open issues with ACDC	Nokia Networks	discussion							Rel-13	ACDC-RAN-Core				
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	noted		R2-154105	Queuing delay measurement	Nokia Networks	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	noted		R2-154106	Logged MDT data filtering due to IDC	Nokia Networks	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	No	withdrawn		R2-154107	Introduction of LoggedMeasurementResults filtering due to IDC	Nokia Networks	CR	36.331	12.7.0			B		Rel-13	LTE_eMDT2-Core				CR will not be treated in this bis meeting
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	No	withdrawn		R2-154108	Introduction of LoggedMeasurementResults filtering due to IDC	Nokia Networks	CR	36.331	12.7.0			B		Rel-13	LTE_eMDT2-Core				CR will not be treated in this bis meeting
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154109	Stage-3 work on RS-SINR measurements	NTT DOCOMO, INC.	discussion						related to LSin R2-154022	Rel-13	LTE_MC_load-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154110	Intdroduction of RS-SINR measurements	NTT DOCOMO, INC.	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	noted		R2-154111	Threshold Value Range	Nokia Networks, Ericsson, LG Electronics, Mediatek, Panasonic, Samsung, ZTE	discussion							Rel-13	LTE_dualC_enh-Core				

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AI #	Agenda item	Upl oad ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn		R2-154112	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	CR	36.300	11.13.0			F		Rel-11	SPIA_IDC_LTE-Core				CR will not be treated in this bis meeting
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn		R2-154113	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	CR	36.300	12.7.0			A		Rel-12	SPIA_IDC_LTE-Core				CR will not be treated in this bis meeting
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn		R2-154114	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	CR	36.300	13.1.0			A		Rel-13	SPIA_IDC_LTE-Core				CR will not be treated in this bis meeting
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154115	Considerations on SFN/subframe offset reporting	CATT	discussion							Rel-13	LTE_dualC_enh-Core				
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154116	Considerations on SFN/subframe offset reporting for 331	CATT	draftCR	36.331	12.6.0					Rel-13	LTE_dualC_enh-Core				Tdoc ino and CR contents are not matched
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	noted		R2-154117	Scheduling coordination between MeNB and SeNB	CATT	discussion							Rel-13	LTE_dualC_enh-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154118	RRM measurements for LAA cell	CATT	discussion							Rel-13	LTE_LAA-Core				
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	noted		R2-154119	Deactivation timer for LAA	CATT	discussion							Rel-13	LTE_LAA-Core				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154120	DRX and Short interval SPS	CATT	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154121	PDCCH missing issue with skipping UL transmission	CATT	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	noted		R2-154122	Analysis on resource efficiency of uplink access solutions	CATT, CATR	discussion							Rel-13	FS_LTE_LATRED				
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	Yes	not treated		R2-154123	VoLTE Capacity Analysis with TTI shortening	CATT	discussion							Rel-13	FS_LTE_LATRED				
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	noted		R2-154124	PUCCH SCell change	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154125	LCID for Activation/deactivation MAC CE	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-154126	Clarification on valid PUCCH SR resource	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-154127	Clarification on A/N feedback for DL transmission	CATT	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154128	36304_CRxxxx_(Rel-13)_R2-15xxxx Randomized thrshold offset	China Telecom, ZTE Corporation	draftCR	36.304	12.6.0			B		Rel-13	LTE_MC_load-Core				wrong spec number used in CR cover; it should be 12.6.0
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154129	36331_CRxxxx_(Rel-13)_R2-15xxxx Randomized thrshold offset	China Telecom, ZTE Corporation	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	revised		R2-154130	UP issues of SC-PTM	ZTE Corporation	discussion							Rel-13	LTE_SC_PTM-Core		R2-154879		
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-154131	SC-PTM Service Continuity	ZTE Corporation	discussion							Rel-13	LTE_SC_PTM-Core				
07.18	LTE Rel-13: LTE TEI13 enhancements	No	withdrawn		R2-154132	Paging optimization	Huawei, HiSilicon	CR	36.331	12.7.0			B		Rel-13	TEI13				CR will not be treated in this bis meeting
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	agreed		R2-154133	Correction on SCG release	ZTE Corporation	draftCR	36.331	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_SC_enh_dualC-Core				wrong spec ver unmber used in CR cover
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	noted		R2-154134	Discussion on the DL PDCP discard issue	ZTE Corporation	discussion							Rel-13	LTE_dualC_enh-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154135	Remaining issues related to RRM measurements	China Mobile Com. Corporation	discussion							Rel-13	LTE_LAA-Core				
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	No	withdrawn		R2-154136	Usage of new LCID(s) or not for Rel-13 extended PHR MAC CE	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154137	RSSI measurements	China Mobile Com. Corporation	discussion							Rel-13	LTE_LAA-Core				
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	not pursued		R2-154138	Discussion on the DL PDCP discard issue	ZTE Corporation	draftCR	36.323	12.4.0			B	related to R2-154134	Rel-13	LTE_dualC_enh-Core				wrong spec ver unmber used in CR cover
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	No	withdrawn		R2-154139	Usage of new LCID or not for the 4 bytes A/D MAC CE	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154140	Discussion on introducing RS-SINR measurement	China Mobile Com. Corporation	discussion							Rel-13	LTE_MC_load-Core				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-154141	Coexistence and notification issues of ACDC	China Mobile Com. Corporation	discussion							Rel-13	ACDC-RAN-Core				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154142	Potential issues on enhanced SPS mechanism	China Mobile Com. Corporation	discussion							Rel-13	FS_LTE_LATRED				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154143	WiFi-link data retransmission consideration for LWA	China Mobile Com. Corporation	discussion							Rel-13	LTE_WLAN_radio-Core				
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	not treated		R2-154144	Background Traffic	Nokia Networks	discussion							Rel-13	TEI13				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154145	Discussion on RSSI Reporting	Guangdong OPPO Mobile Telecom.	discussion							Rel-13	LTE_LAA-Core				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154146	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	draftCR	36.300	11.13.0			F		Rel-11	SPIA_IDC_LTE-Core		R2-154965		
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154147	Considerations of V2X implications to RAN operation	Nokia Networks	discussion							Rel-13	FS_LTE_V2X				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-154148	Sidelink gap request for direct discovery	Nokia Networks	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	agreed		R2-154149	Paging optimization	Huawei, HiSilicon	draftCR	36.331	12.7.0			B	revision of R2-153912, which was technically endorsed in RAN2#91; in principle agreed in RAN2#91bis	Rel-13	TEI13				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154150	Contents of radio layer information in Relay discovery messages	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-154151	Differentiation between PS discovery and non-PS discovery	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-154152	Direct Discovery on non-PCell carriers	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154153	Filtering of sidelink measurements	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154154	Management of Sidelink logical channel groups	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154155	Mobility aspects of UE-to-Network Relaying	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				

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AI #	Agenda item	Upload ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-154156	On D2D gaps	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-154157	Out of coverage discovery	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	noted		R2-154158	Establishment and release of the PC5 link between the Relay UE and the Remote UE	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154159	Providing ProSe priority	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154160	Relay selection criteria for public safety discovery	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154161	Handling collisions between communication and discovery resources	Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	postponed		R2-154162	Introduction of eD2D	Ericsson	draftCR	36.321	12.7.0			B		Rel-13	LTE_eD2D_Prox-Core				wrong spec ver number used in CR cover; it should be 12.7.0; moved from 7.5.1.1 to 7.5
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	not pursued		R2-154163	Decoding of PDCCH with SL-RNTI	Ericsson	draftCR	36.302	12.5.0			F		Rel-12	LTE_D2D_Prox-Core				
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-154164	SC-PTM Service Continuity solution	TD Tech Ltd	discussion							Rel-13	LTE_SC_PTM-Core				
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154165	Introduction of Dual Connectivity enhancements in Rel-13 (Alt.1)	NTT DOCOMO, INC.	draftCR	36.331	12.7.0			B		Rel-13	LTE_dualC_enh-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154166	Discussion on the UL SFN or subframe offset	ZTE Corporation	discussion							Rel-13	LTE_dualC_enh-Core				
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154167	Signaling improvements on SFN or subframe offsets	ZTE Corporation	discussion							Rel-13	LTE_dualC_enh-Core				
07.10.3	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: Handover latency enhancements	Yes	not treated		R2-154168	Analysis on the handover latency	ZTE Corporation	discussion							Rel-13	FS_LTE_LATRED				
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154169	NB-IOT User plane	Ericsson	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.1	LTE Rel-13: WI: Narrowband IOT: Control Plane: System Information	Yes	noted		R2-154170	NB-IOT System Information	Ericsson	discussion							Rel-13	NB_IOT-Core				new WI code added
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154171	Need of shorter wake up duration from eDRX	SoftBank Corp.	discussion							Rel-13	LTE_exIDRX-Core				
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	Yes	not treated		R2-154172	Utilization of short TTI in higher layer	ZTE Corporation	discussion							Rel-13	FS_LTE_LATRED				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154173	UE request on idle mode eDRX cycle value	SoftBank Corp.	discussion							Rel-13	LTE_exIDRX-Core				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154174	NB-IOT Overview	Ericsson	discussion							Rel-13	NB_IOT-Core				new WI code added
06.02.09.2	LTE: Rel-12: Other Closed Rel-12 WIs - UP	Yes	agreed		R2-154175	Correction on transparent MAC PDU	ZTE Corporation	draftCR	36.321	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	TEI12				wrong spec ver number used in CR cover; it should be 12.7.0
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154176	MCCH acquisiation for 1.4MHz MBSFN	ZTE Corporation	draftCR	36.331	9.18.0			B		Rel-9	TEI9				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154177	MCCH acquisiation for 1.4MHz MBSFN	ZTE Corporation	draftCR	36.331	10.17.0			A		Rel-10	TEI9				wrong WI code used in CR cover; it should be TEI9 as cat.A CR
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154178	MCCH acquisiation for 1.4MHz MBSFN	ZTE Corporation	draftCR	36.331	11.12.0			A		Rel-11	TEI9				wrong WI code used in CR cover; it should be TEI9 as cat.A CR
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154179	MCCH acquisiation for 1.4MHz MBSFN	ZTE Corporation	draftCR	36.331	12.7.0			A		Rel-12	TEI9		R2-154968		wrong spec ver number & WI code used in CR cover; it should be TEI9 as cat.A CR
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154180	Discussion on LAA measurement issues	Guangdong OPPO Mobile Telecom.	discussion							Rel-13	LTE_LAA-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154181	SIB SystemInfo ValueTag for enhanced storage time	Gemalto N.V., Vodafone	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154182	Paging for normal devices supporting enhanced coverage	Gemalto N.V.	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154183	MTC cell re-selection and mobility implications	Gemalto N.V.	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	noted		R2-154184	Split Bearer Reconfiguration	Nokia Networks	discussion							Rel-13	LTE_dualC_enh-Core				
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154185	New LCID(s) for activation command and extended PHR MAC CE	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core				
06.02.06	LTE: Rel-12: WI: Low Cost MTC for LTE	Yes	not pursued		R2-154186	Correction to ue-RadioPagingInfo IE	Spreadtrum Communications	draftCR	36.331	12.7.0			F		Rel-12	LC_MTC_LTE-Core				wrong spec ver number used in CR cover; it should be 12.7.0
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	agreed		R2-154187	Clarification to SCG RLF timers and constants reconfiguration	Spreadtrum Communications	draftCR	36.331	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_SC_enh_dualC-Core				wrong spec ver number used in CR cover; it should be 12.7.0
11.05	UTRA Rel-13: WI: Multiflow Enhancements for UTRA	Yes	not pursued		R2-154188	Correction on DC-HSUPA and 3F-4C	Huawei, HiSilicon	draftCR	25.319	12.3.0			F		Rel-13	HSDPA_MFTX_enh-Core				
10.1	UTRA Rel-12: WI: Further EUL Enhancements	Yes	noted		R2-154189	Discussion on DTCH transmisison control due to access group mechanism	Huawei, HiSilicon	discussion							Rel-12	EDCH_enh-Core				
10.1	UTRA Rel-12: WI: Further EUL Enhancements	Yes	revised		R2-154190	Correction on DTCH transmisison control due to access group mechanism	Huawei, HiSilicon	draftCR	25.331	12.7.0			F		Rel-12	EDCH_enh-Core		R2-154939		wrong spec ver number used in CR cover; it should be 12.7.0
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	noted		R2-154191	Contention based uplink transmission	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154192	Further analysis on uplink transmission skipping	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154193	Downlink latency reduction for unsynchronized UEs	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED				
07.10.3	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: Handover latency enhancements	Yes	noted		R2-154194	Latency reduction during Handover	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_LATRED				
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	noted	late	R2-154195	Summary of email discussion: [91#22][LTE/SC-PTM] Scheduling pattern, DRX and Change Notification	Huawei (Rapporteur)	report						related to email discussion [91#22]	Rel-13	LTE_SC_PTM-Core				
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	noted	late	R2-154196	Summary of email discussion: [91#23][LTE/SC-PTM] Service continuity	Huawei (Rapporteur)	report						related to email discussion [91#23]	Rel-13	LTE_SC_PTM-Core				
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-154197	L2 aspects of SC-PTM	Huawei, HiSilicon	discussion							Rel-13	LTE_SC_PTM-Core				
07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	not treated		R2-154198	SC-PTM UE capability	Huawei, HiSilicon	discussion							Rel-13	LTE_SC_PTM-Core				
07.03.1	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Organizational	Yes	postponed		R2-154199	Introduction of SC-PTM in 36.300	Huawei, HiSilicon	draftCR	36.300	13.1.0			B		Rel-13	LTE_SC_PTM-Core				wrong spec version number used in CR cover

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AI #	Agenda item	Upload ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment	
07.03.1	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Organizational	Yes	postponed		R2-154200	Introduction of SC-PTM in 36.331	Huawei, HiSilicon	draftCR	36.331	12.7.0					Rel-13	LTE_SC_PTM-Core				wrong spec ver number used in CR cover; it should be 12.7.0	SC-PTM
07.03.1	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Organizational	Yes	postponed		R2-154201	Introduction of SC-PTM in 36.321	Huawei, HiSilicon	draftCR	36.321	12.7.0			B		Rel-13	LTE_SC_PTM-Core				wrong spec ver number used in CR cover; it should be 12.7.0	SC-PTM
10.1	UTRA Rel-12: WI: Further EUL Enhancements	Yes	not treated		R2-154202	Correction on DTCH transmisison control due to access group mechanism	Huawei, HiSilicon	draftCR	25.331	13.0.0			A		Rel-13	EDCH_enh-Core				wrong spec version number used in CR cover	UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	noted		R2-154203	Improved synchronized RRC procedures	Ericsson	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	not treated		R2-154204	Improved synchronized RRC procedures	Ericsson	draftCR	25.300	12.4.0			B		Rel-13	UTRA_EDL_L23-Core				wrong WI code used in CR cover; It should be "UTRA_EDL_L23-Core"	UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	postponed		R2-154205	Improved synchronized RRC procedures	Ericsson	draftCR	25.321	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong WI code used in CR cover; It should be "UTRA_EDL_L23-Core"	UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	not treated		R2-154206	Improved synchronized RRC procedures	Ericsson	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong WI code used in CR cover; It should be "UTRA_EDL_L23-Core"	UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	noted		R2-154207	Retrievable configurations	Ericsson	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	not treated		R2-154208	Retrievable configurations	Ericsson	draftCR	25.300	12.4.0			B		Rel-13	UTRA_EDL_L23-Core				wrong WI code used in CR cover; It should be "UTRA_EDL_L23-Core"	UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	not treated		R2-154209	Retrievable configurations	Ericsson	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong WI code used in CR cover; It should be "UTRA_EDL_L23-Core"	UMTS
11.01.7	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-154210	CR to 25.300 on L2 and L3 Downlink enhancements	Huawei, HiSilicon	draftCR	25.300	12.4.0			B		Rel-13	UTRA_EDL_L23-Core					UMTS
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	not pursued		R2-154211	Clarification to parameter Qqualmin	Spreadtrum Communications . CATR	draftCR	36.331	12.7.0			F		Rel-12	TEI12				wrong spec ver number & WI codes used in CR cover; TEI11 should be deleted	
06.02.02	LTE: Rel-12: WI: Small Cell Enhancements - Physical Layer	Yes	agreed		R2-154212	Correction to triggerQuantityCSI-RS	Spreadtrum Communications . CATR	draftCR	36.331	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_SC_enh_L1-Core				wrong spec ver number used in CR cover; it should be 12.7.0	
11.01.7	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-154213	CR to 25.308 on L2 and L3 Downlink enhancements	Huawei, HiSilicon	draftCR	25.308	13.0.0			B		Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.7	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	not treated		R2-154214	CR to 25.319 on L2 and L3 Downlink enhancements	Huawei, HiSilicon	draftCR	25.319	12.3.0			B		Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	not treated		R2-154215	Discussion on open issues for retrievable configuration	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.1	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Retrievable configurations	Yes	not treated		R2-154216	CR to 25.331 on retrievable configurations	Huawei, HiSilicon	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	noted		R2-154217	Discussion on open issues for seamless transition from URA_PCH to CELL_FACH state	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated		R2-154218	CR to 25.301 on seamless transition from URA_PCH to CELL_FACH state	Huawei, HiSilicon	draftCR	25.301	12.0.0			B		Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated		R2-154219	CR to 25.331 on seamless transition from URA_PCH to CELL_FACH state	Huawei, HiSilicon	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	not treated		R2-154220	Discussion on open issues for RNTI extension	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	not treated		R2-154221	CR to 25.331 on RNTI extension	Huawei, HiSilicon	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.3	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: RNTI extension mechanisms	Yes	not treated		R2-154222	CR to 25.321 on RNTI extension	Huawei, HiSilicon	draftCR	25.321	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Autonomous state transitions	Yes	noted		R2-154223	Discussion on open issues on enhanced state transition	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Autonomous state transitions	Yes	not treated		R2-154224	CR to 25.331 on enhanced state transition	Huawei, HiSilicon	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	No	withdrawn		R2-154225	Discussion on open issues on improved synchronized RRC procedure	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	noted		R2-154226	Discussion on open issues on improved synchronized RRC procedure	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	not treated		R2-154227	CR to 25.331 on improved synchronized RRC procedure	Huawei, HiSilicon	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	not treated		R2-154228	CR to 25.321 on improved synchronized RRC procedure	Huawei, HiSilicon	draftCR	25.321	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	noted		R2-154229	Discussion on open issue for blind HARQ retransmissions for HSDPA	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_L23-Core					UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	postponed		R2-154230	CR to 25.331 on blind HARQ retransmissions for HSDPA	Huawei, HiSilicon	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS
11.01.4	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved HARQ retransmission	Yes	postponed		R2-154231	CR to 25.321 on blind HARQ retransmissions for HSDPA	Huawei, HiSilicon	draftCR	25.321	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec version number used in CR cover; it should be 13.0.0	UMTS

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11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	noted		R2-154232	Considerations on DL RLC PDU size configuration for D2F state transition	Huawei, HiSilicon	discussion							Rel-13	TEI13				
11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated		R2-154233	Correction on DL RLC PDU size configuration for D2F state transition	Huawei, HiSilicon	draftCR	25.331	13.0.0			F		Rel-13	TEI13				wrong spec version number used in CR cover; it should be 13.0.0
11.09	UTRA Rel-13: WI: Downlink TPC enhancements for UMTS	Yes	noted		R2-154234	Discussion on RAN2 impact for Downlink TPC enhancements	Huawei, HiSilicon	discussion							Rel-13	UTRA_EDL_TPC-Core				
11.04	UTRA Rel-13: WI: Study on Network-Assisted Interference Cancellation and Suppression for UMTS	Yes	noted		R2-154235	Discussion on RAN2 impact for NAICS	Huawei, HiSilicon	discussion							Rel-13	UTRA_NAICS-Core				new WI code added
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-154236	Discussion on open issues for ACDC	Huawei, HiSilicon	discussion							Rel-13	ACDC-RAN-Core				
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	noted		R2-154237	Discussion on open issues for ACDC in UMTS	Huawei, HiSilicon	discussion							Rel-13	ACDC-RAN-Core				
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	not treated		R2-154238	CR to 25.304 on ACDC in UMTS	Huawei, HiSilicon	draftCR	25.304	12.6.0			B		Rel-13	ACDC-RAN-Core				
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	not treated		R2-154239	CR to 25.331 on ACDC in UMTS	Huawei, HiSilicon	draftCR	25.331	13.0.0			B		Rel-13	ACDC-RAN-Core				wrong spec version number used in CR cover; it should be 13.0.0
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	noted		R2-154240	Discussion on LTE-WLAN operation via IP tunnelling	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio_legacy-Core				new WI code added
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154241	Impacts of MCPTT Floor Control and pre-emption on AS	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-154242	Interruption in PS Communication	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	revised		R2-154243	Uu Link quality of Remote UE	PANASONIC R&D Center Germany	discussion						related to email discussion [91#31]	Rel-13	LTE_eD2D_Prox-Core		R2-154886		
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154244	Buffer status reporting/priority handling for ProSe communication	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154245	Missing Packet due to Half-duplex in PC5	CATT	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154246	Reisource pool selection for the autonomous resource allocation mode	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154247	Provisioning ProSe Priority-Per Packet information to UE-to-network Relay UE	PANASONIC R&D Center Germany	discussion							Rel-13	LTE_eD2D_Prox-Core				
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	agreed		R2-154248	Correction on MAC header for SL-SCH	CATT	draftCR	36.321	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_D2D_Prox-Core				wrong spec ver number used in CR cover; it should be 12.7.0
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised	late	R2-154249	Report of [91#20][LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls	Nokia Networks	report						related to email discussion [91#20]	Rel-10	TEI10		R2-154894		
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	revised	late	R2-154250	Report of [91#21][LTE/CAfe] Capability signalling enhancements	Nokia Networks	report						related to email discussion [91#21]	Rel-13	LTE_CA_enh_b5C-Core		R2-154895		
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154251	Stage-2 signalling flows for LWA	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				moved from 7.6.1 to 7.6.2.1
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154252	Security and authentication in LWA	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				moved from 7.6.1 to 7.6.2.1
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154253	WLAN Capability knowledge at eNB	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154254	RRC for LWA	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	noted		R2-154255	WLAN status indication for LWA/LWI	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154256	UE capabilities for LWA	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154257	Remaining QoS and security details for adaptation layer in LTE-WLAN aggregation	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154258	Flow control for LWA	Nokia Networks	discussion							Rel-13	LTE_WLAN_radio-Core				
07.10.3	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: Handover latency enhancements	Yes	not treated		R2-154259	Latency reduction during handover	Nokia Networks	discussion							Rel-13	FS_LTE_LATRED				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154260	Network Architecture and Feasibility Evaluation for Uu-based V2V/V2P	CATT	discussion							Rel-13	FS_LTE_V2X				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154261	Draft Reply RAN1 LS on traffic model assumption in LTE-based V2X	CATT	LS out							Rel-13	FS_LTE_V2X				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154262	Analysis on V2V message size	CATT, CATR	discussion							Rel-13	FS_LTE_V2X				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154263	Discussion on PC5/Uu transport for V2I/N services	CATT	discussion							Rel-13	FS_LTE_V2X				
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-154264	Discussion on remaining issues of relay discovery	Shenzhen Coolpad Technologies	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154265	Measurement Reporting in the Absence of DRS Transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154266	RSSI Measurement in LAA	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core				
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154267	RAN2 impact of LAA sub-frame design options	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core				
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	noted		R2-154268	Remaining issue for PDCP data transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_dualC_enh-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154269	Further Discussion on Resource Allocation Issues and Way Forward for Release 13	Shenzhen Coolpad Technologies	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154270	Discussion on Issues of Priority Handling for ProSe Communication	Shenzhen Coolpad Technologies	discussion							Rel-13	LTE_eD2D_Prox-Core				
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	revised		R2-154271	highPriorityAccess for MMTEL voice, MMTEL video and SMS	MediaTek Inc.	draftCR	36.331	12.7.0			F		Rel-12	SCM_LTE-Core		R2-154976		wrong spec ver number used in CR cover; it should be 12.7.0
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	noted		R2-154272	highPriorityAccess for MMTEL voice MMTEL video and SMS	MediaTek Inc.	discussion							Rel-12	SCM_LTE-Core				

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment	
06.02.09.2	LTE: Rel-12: Other Closed Rel-12 WIs - UP	Yes	not pursued		R2-154273	Scheduling Request on PUCCH with UL-SCH resource	MediaTek Inc.	draftCR	36.321	12.7.0			F		Rel-12	LTE_CA-Core, TEI12				wrong spec ver number & WI code used in CR cover: TEI12 should be added since LTE-CA-Core was a REL-10 WI code	LTE UP
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154274	CG Indication of Uplink Split Threshold	MediaTek Inc.	discussion							Rel-13	LTE_dualC_enh-Core					
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154275	RRM Measurement for LWA and NCIWK	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core					
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154276	WLAN Mobility with WLAN Group	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core					
11.04	UTRA Rel-13: WI: Study on Network-Assisted Interference Cancellation and Suppression for UMTS	Yes	revised		R2-154277	Considerations on solutions for enhanced offloading in NAICS	Nokia Networks	discussion							Rel-13	UTRA_NAICS-Core		R2-154884		new WI code added	UMTS
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154278	Scheduling of MTC SIBs in Normal Coverage	Sierra Wireless, S.A.	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154279	Considerations for loose paging occasion synchronism between eNBs	Sierra Wireless, S.A.	discussion							Rel-13	LTE_eIdDRX-Core					eDRX
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	noted		R2-154280	Workplan for dual carrier HSUPA enhancements for UTRAN CS	Nokia Networks	discussion							Rel-13	DC_HSUPA_CS-Core				new WI code added	UMTS
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	noted		R2-154281	Initial considerations on introduction of the dual carrier HSUPA enhancements for UTRAN CS	Nokia Networks	discussion							Rel-13	DC_HSUPA_CS-Core				new WI code added	UMTS
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	postponed		R2-154282	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.319	Nokia Networks	draftCR	25.319	12.3.0			B		Rel-13	DC_HSUPA_CS-Core				wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"	UMTS
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	postponed		R2-154283	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.302	Nokia Networks	draftCR	25.302	13.0.0			B		Rel-13	DC_HSUPA_CS-Core				wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"	UMTS
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	postponed		R2-154284	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.306	Nokia Networks	draftCR	25.306	12.6.0			B		Rel-13	DC_HSUPA_CS-Core				wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"	UMTS
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	postponed		R2-154285	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.331	Nokia Networks	draftCR	25.331	13.0.0			B		Rel-13	DC_HSUPA_CS-Core				wrong WI code used in CR cover; it should be "DC_HSUPA_CS-Core"	UMTS
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	revised		R2-154286	[draft] LS on RAN2 agreements for dual carrier HSUPA enhancements for UTRAN CS	Nokia Networks	LS out							Rel-13	DC_HSUPA_CS-Core		R2-154936		new WI code added	UMTS
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-154287	Discussion on remaining aspects of ACDC for LTE and UMTS	Intel Corporation	discussion							Rel-13	ACDC-RAN-Core					
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	noted		R2-154288	256QAM support for UE category 10 and below	Intel Corporation	discussion							Rel-12	TEI12, LTE_SC_enh_L1-Core					
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	postponed		R2-154289	256QAM support for UE category 10 and below	Intel Corporation	draftCR	36.306	12.6.0			F		Rel-12	TEI12, LTE_SC_enh_L1-Core					
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	revised		R2-154290	Correction to the support of Mobility State reporting	Intel Corporation	draftCR	36.331	12.7.0			F		Rel-12	HetNet_eMOB_LTE-Core		R2-154978			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-154291	RSSI measurement for LAA	Intel Corporation	discussion							Rel-13	LTE_LAA-Core					
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154292	RRM measurement for LAA	Intel Corporation	discussion							Rel-13	LTE_LAA-Core					
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-154293	Discussion on UE capability signaling for B5C	Intel Corporation	discussion							Rel-13	LTE_CA_enh_b5C-Core					
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	noted	late	R2-154294	Email discussion report on [91#32][LTE/eDRX] eDRX and H-SFN range	Intel Corporation	report							Rel-13	LTE_eIdDRX-Core					eDRX
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154295	Open aspects on extending DRX cycle for idle mode	Intel Corporation	discussion							Rel-13	LTE_eIdDRX-Core					eDRX
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	Yes	noted		R2-154296	Protocol impact of TTI reduction	Intel Corporation	discussion							Rel-13	FS_LTE_LATRED					Latency
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	revised		R2-154297	Initial considerations on V2V	Intel Corporation	discussion							Rel-13	FS_LTE_V2X		R2-154896			V2X
10.5	UTRA Rel-12: WI: WLAN/3GPP Radio Interworking - UTRA aspects	Yes	revised		R2-154298	Corrections to WLAN/3GPP radio interworking	Intel Corporation	draftCR	25.331	12.7.0			F		Rel-12	UTRA_LTE_WLAN_interw-Core		R2-154954			UMTS
10.5	UTRA Rel-12: WI: WLAN/3GPP Radio Interworking - UTRA aspects	Yes	revised		R2-154299	Corrections to WLAN/3GPP radio interworking	Intel Corporation	draftCR	25.304	12.6.0			F		Rel-12	UTRA_LTE_WLAN_interw-Core	R2-154947				UMTS
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154300	Realizing off-network MCPTT priority and associated pre-emption on PC5	U.S. Department of Commerce	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154301	Public safety perspectives on GCSE_LTE latency requirements for evaluating UE-Network Relay solutions	U.S. Department of Commerce, Institute for Information Industry (III)	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-154302	Further considerations on relay UE initiation and release process	SHARP Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154303	RSSI measurement for hidden node detection	ETRI	discussion							Rel-13	LTE_LAA-Core					
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154304	Discussion on LBT category 4	ETRI	discussion							Rel-13	LTE_LAA-Core					
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154305	Discussion on Requirements and Potential Latency Related Issues for V2X	Shenzhen Coolpad Technologies	discussion							Rel-13	FS_LTE_V2X					V2X
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154306	Architecture and protocol details for LWA	FUJITSU LIMITED	discussion							Rel-13	LTE_WLAN_radio-Core					
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154307	Discussion on trigger condition for relay reselection	FUJITSU LIMITED	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154308	The remote UE access to relay UE served by one neighbor cell	FUJITSU LIMITED	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154309	Resource allocation for the remote UE and the relay UE	FUJITSU LIMITED	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154310	Remaining issues on the I-eDRX	FUJITSU LIMITED	discussion							Rel-13	LTE_eIdDRX-Core					eDRX
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154311	Further Considerations for RACH Access in Enhanced Coverage	FUJITSU LIMITED	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	revised		R2-154312	Discussion on RAT-dependent enhancements	ZTE Corporation	other							Rel-13	UTRA_LTE_iPos_enh-Core		R2-154977		wrong Type used; it should be type discussion	
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154313	Considerations for paging occasion change indication in idle mode eDRX	Sierra Wireless, S.A.	discussion							Rel-13	LTE_eIdDRX-Core					eDRX
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	withdrawn		R2-154314	Corrections to Sidelink	LG Electronics Inc.	CR	36.323	12.4.0			F		Rel-12	LTE_D2D_Prox-Core				CR will not be treated in this bis meeting	LTE UP

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07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	withdrawn		R2-154315	Introduction of UL split bearer in PDCP	LG Electronics Inc., Nokia Networks, Ericsson, MediaTek Inc., Panasonic, ZTE, CATT, Samsung, NTT DOCOMO	CR	36.323	12.4.0			B		Rel-13	LTE_dualC_enh-Core				CR will not be treated in this bis meeting	
07.02.1	LTE Rel-13: WI: CA enhancements: Organizational	Yes	withdrawn		R2-154316	Introduction of enhanced CA in PDCP	LG Electronics Inc.	CR	36.323	12.4.0			B		Rel-13	LTE_CA_enh_b5C-Core				CR will not be treated in this bis meeting	
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154317	Providing PPP information to Relay UE	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154318	Enhanced Scheduling Request for Latency Reduction	LG Electronics Inc.	discussion							Rel-13	FS_LTE_LATRED					Latency
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154319	ProSe ID collision	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154320	LCID for PHR and A/D MAC CE	LG Electronics Inc.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154321	Construction of SL BSR with ProSe Priority	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154322	Long-duration UL grant	LG Electronics Inc.	discussion							Rel-13	FS_LTE_LATRED					Latency
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154323	Considerations on SL BSR for relay UE	Innovative Technology Lab Co.	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	postponed		R2-154324	sCellDeactivationTimer handling upon PUCCH release	LG Electronics Inc.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-154325	PPP and LCG mapping	LG Electronics Inc.	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154326	Size of extended PDCP SN	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154327	Extension of L field in the MAC header	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	postponed		R2-154328	Extended L field in MAC subheader	SAMSUNG Electronics Co., Ltd.	draftCR	36.321	12.7.0			B		Rel-13	LTE_CA_enh_b5C-Core				wrong spec ver number used in CR cover; it should be 12.7.0	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	postponed		R2-154329	Signaling support for Extended L field in MAC subheader	SAMSUNG Electronics Co., Ltd.	draftCR	36.331	12.7.0			B		Rel-13	LTE_CA_enh_b5C-Core				wrong spec ver number used in CR cover; it should be 12.7.0	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154330	Necessity of UM RLC SN extension	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154331	Combination of extended L2 headers	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-154332	Measurement objects for LAA	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_LAA-Core					
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154333	UE requirements for LTE-WLAN interworking/ aggregation	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_WLAN_radio-Core					
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154334	Co-existence with Rel-12 and Rel-13 LTE-WLAN interworking	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_WLAN_radio-Core					
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154335	How to deliver LTE PDU over WLAN for LTE-WLAN aggregation	SAMSUNG Electronics Co., Ltd.	discussion							Rel-13	LTE_WLAN_radio-Core					
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154336	Consideration on RACH procedure in coverage enhancement	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154337	Consideration on PRACH power ramping	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154338	Mobility Enhancement in eMTC	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.04.7	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: other	Yes	not treated		R2-154339	Consideration on the simultaneous transmission for MTC Ues	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-154340	UE CA capability signalling for B5C	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core					
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	noted		R2-154341	PUCCH SCell configuration and de-configuration	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core					
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154342	Further discussion on extension of L field in MAC PDU	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154343	Discussion on extension of UM RLC SN	Huawei, HiSilicon	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-154344	Support for SRS switching among TDD SCells	Huawei, HiSilicon	discussion							Rel-13	TEI13					
06.01.02	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: UP	Yes	noted		R2-154345	Further discussion on MSI with zero length	Samsung Electronics Co., Ltd	discussion	36.321						Rel-12	TEI12					LTE UP
06.01.02	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: UP	Yes	withdrawn		R2-154346	Clarification on L field setting to zero	Samsung Electronics Co., Ltd	CR	36.321	12.7.0			D		Rel-12	TEI12				CR will not be treated in this bis meeting	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154347	Correction on extended PHR2 format	Samsung Electronics Co., Ltd	pCR	36.321						Rel-13	LTE_CA_enh_b5C-Core				wrong Type used; it should be "draftCR"	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154348	Remaining issues on extended PHR2	Samsung Electronics Co., Ltd	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154349	Value range for threshold	Samsung Electronics Co., Ltd, CATT, Ericsson, LG Electronics, Mediatek, Nokia Networks, Panasonic, ZTE	draftCR	36.331	12.7.0			B		Rel-13	LTE_dualC_enh-Core				wrong spec ver number used in CR cover; it should be 12.7.0	
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154350	Further discussion on Prescheduling	Samsung Electronics Co., Ltd	discussion							Rel-13	FS_LTE_LATRED					Latency
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154351	Skipping uplink transmission on configured uplink grant with no data to transmit	Samsung Electronics Co., Ltd	pCR	36.321						Rel-13	TEI13, FS_LTE_LATRED				wrong Type used; it should be "draftCR"	Latency

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154352	Skipping uplink transmission on configured uplink grant with no data to transmit	Samsung Electronics Co., Ltd	pCR	36.331						Rel-13	TEI13, FS_LTE_LATRED				wrong Type used; it should be "draftCR"
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	noted		R2-154353	Enhancements on SPS prescheduling	Samsung Electronics Co., Ltd	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154354	Enhancements on SPS prescheduling	Samsung Electronics Co., Ltd	pCR							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154355	Configuring SPS on SCell	Samsung Electronics Co., Ltd	pCR	36.331						Rel-13	TEI13, FS_LTE_LATRED				wrong Type used; it should be "draftCR"
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	withdrawn		R2-154356	Connected mode mobility enhancement for Rel-13 low complexity and enhanced coverage UEs	Spreadtrum Communications	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154357	Extending DRX Cycle in Idle Mode	Huawei, HiSilicon	discussion							Rel-13	LTE_extDRX-Core				
07.09.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-154358	Extending DRX Cycle in Connected Mode	Huawei, HiSilicon	discussion							Rel-13	LTE_extDRX-Core				
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: User Plane aspects	Yes	not treated		R2-154359	Unicast Transmission/Reception Issues for Rel-13 MTC	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154360	MTC Paging Transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154361	MTC SIB Transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154362	Further Discussion on RRM and RSSI Measurements for LAA Scell	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154363	Further Discussion on Radio Link Adaptation Issues for LAA Scell	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core				
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	noted		R2-154364	PDCP Retransmissions	Nokia Networks	discussion							Rel-13	LTE_dualC_enh-Core				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-154365	Remaining issues in ACDC	HTC Corporation	discussion							Rel-13	ACDC-RAN-Core				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn		R2-154366	Correction to application of a NS value in RRC_CONNECTED	HTC Corporation	CR	36.331	10.18.0			F		Rel-10	LTE_CA-Core				CR will not be treated in this bis meeting
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn		R2-154367	Correction to application of a NS value in RRC_CONNECTED	HTC Corporation	CR	36.331	11.13.0			A		Rel-11	LTE_CA-Core				CR will not be treated in this bis meeting
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	No	withdrawn		R2-154368	Correction to application of a NS value in RRC_CONNECTED	HTC Corporation	CR	36.331	12.7.0			A		Rel-12	LTE_CA-Core				CR will not be treated in this bis meeting
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154369	UE radio access capability for WLAN	HTC Corporation	discussion							Rel-13	LTE_WLAN_radio-Core				
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	noted		R2-154370	Extending the IDC framework for LAA	Samsung R&D Institute UK	discussion							Rel-13	LTE_LAA-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154371	QoS handling of offloaded bearer in LWA	Samsung R&D Institute UK	discussion							Rel-13	LTE_WLAN_radio-Core				
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	not treated		R2-154372	WLAN/Bluetooth and Barometric Pressure positioning	Apple Europe Limited	draftCR	36.305	12.2.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				wrong WI code used in CR cover
11.08	UTRA Rel-13: WI: Indoor Positioning enhancements for UTRA and LTE	Yes	revised		R2-154373	WLAN/Bluetooth and Barometric Pressure positioning	Apple Europe Limited	draftCR	25.305	12.1.0			B	CR is merged into R2-154959	Rel-13	UTRA_LTE_iPos_enh-Core		R2-154959		wrong WI code used in CR cover; it should be "UTRA_LTE_iPos_enh_Core"
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154374	Study on Activation and Deactivation for LAA	III	discussion							Rel-13	LTE_LAA-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	withdrawn		R2-154375	Remaining issues about LTE WLAN Aggregation	Spreadtrum Communications	discussion							Rel-13	LTE_WLAN_radio-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154376	Discussion on Configuring UE Measurement Report	ITRI	discussion							Rel-13	LTE_LAA-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154377	Carrier Prioritization for Type 1 Inter-Carrier Discovery Transmission	ITRI	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154378	System information modification for Release-13 low complexity UEs and enhanced coverage	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154379	Discussion on open aspects of random access procedure for Release-13 low complexity UEs and enhanced coverage	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.7	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: other	Yes	not treated		R2-154380	Timer impacts for Release-13 low complexity UEs and enhanced coverage	Intel Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-154381	Open aspects of UE-to-Network relay connection establishment	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154382	Support of one-to-one communication	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	noted		R2-154383	Support of public safety discovery in OOC	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154384	Provision of discovery resource configuration for non-serving carrier	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-154385	Priority handling aspects for ProSe communication	Intel Corporation	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154386	Further aspects of fast uplink access solutions	Intel Corporation	discussion							Rel-13	FS_LTE_LATRED				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	withdrawn		R2-154387	General L2/L3 impacts due to introduction of NB-IOT feature	Intel Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.1	LTE Rel-13: WI: Narrowband IOT: Control Plane: System Information	Yes	not treated		R2-154388	System information impacts due to introduction of NB-IOT feature	Intel Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154389	Paging impacts due to introduction of NB-IOT feature	Intel Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	noted		R2-154390	RRC impacts due to introduction of NB-IOT feature	Intel Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154391	User plane impacts due to introduction of NB-IOT feature	Intel Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154392	Remaining user plane aspects of LWA	Intel Corporation	discussion							Rel-13	LTE_WLAN_radio-Core				

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AI #	Agenda item	Upload ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment	
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	noted		R2-154393	LWA PDCP transfer on WLAN	Intel Corporation, China Telecom, MediaTek Inc., Nokia Networks, Ericsson, Huawei, HiSilicon, Qualcomm Incorporated	discussion							Rel-13	LTE_WLAN_radio-Core					
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154394	UE status reporting for LWA	Intel Corporation, China Telecom	discussion							Rel-13	LTE_WLAN_radio-Core					
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	revised		R2-154395	Report on RAN2 email discussion: [91#27][LTE/WiFi] RRM Measurement Framework for WLAN	Intel Corporation	report							Rel-13	LTE_WLAN_radio-Core		R2-154987			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154396	Further Discussion on LWA Procedure	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core					
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154397	Discussion on traffic steering command of LTE-WLAN Interworking	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core					
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	noted		R2-154398	Email discussion report on [91#30][LTE/DCe] SFN/subframe offset reporting	NTT DOCOMO INC.(rapporteur)	report						Related to email discussion [91#30]	Rel-13	LTE_dualC_enh-Core					
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154399	Consideration for RAN Controlled WLAN Interworking	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core					
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154400	Limited reporting of WLAN measurement results	ITRI	discussion							Rel-13	LTE_WLAN_radio-Core					
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	not treated		R2-154401	Issues of Uplink Split Bearer Configuration	ITRI	discussion							Rel-13	LTE_dualC_enh-Core					
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	withdrawn		R2-154402	Introduction of PUCCH on SCell in CA	NTT DOCOMO INC.	CR	36.302	12.5.0			B		Rel-13	LTE_CA_enh_b5C-Core				CR will not be treated in this bis meeting	
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	agreed		R2-154403	Running RLC CR on extension of protocol formats	NTT DOCOMO INC., Nokia Networks (rapporteurs)	draftCR	36.322	12.3.0			B	in principle agreed in RAN2#91bis	Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-154404	Discussion on C-RNTI handling for CA beyond 5CCs	NTT DOCOMO INC.	discussion						revision of R2-153574	Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154405	Configuration of extended L2 header	NTT DOCOMO INC.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154406	Handling of huge PDCP control PDU	NTT DOCOMO INC.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	agreed		R2-154407	Corrections to Sidelink	LG Electronics Inc.	draftCR	36.323	12.4.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_D2D_Prox-Core					LTE UP
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-154408	Condition to include Type2 RH	NTT DOCOMO INC.	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	endorsed		R2-154409	Introduction of UL split bearer in PDCP	LG Electronics Inc., Nokia Networks, Ericsson, MediaTek Inc., Panasonic, ZTE, CATT, Samsung, NTT DOCOMO	draftCR	36.323	12.4.0			B	emdorsed as a running CR	Rel-13	LTE_dualC_enh-Core					
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	revised		R2-154410	Introduction of enhanced CA in PDCP	LG Electronics Inc.	draftCR	36.323	12.4.0			B		Rel-13	LTE_CA_enh_b5C-Core		R2-154902		moved from 7.2.1 to 7.2.3.1	LTE UP
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154411	Combined SR with BSR for reducing UP latency	III	discussion							Rel-13	FS_LTE_LATRED					Latency
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not pursued		R2-154412	Correction on T340 handling	HTC Corporation	draftCR	36.331	11.13.0			F		Rel-11	LTE_eDDA-Core					
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154413	UL Issues for LAA SceII	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core					
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	withdrawn		R2-154414	Refine positioning of Legacy UE with assistance by nearby ProSe-enabled UE	III	pCR							Rel-13	UTRA_LTE_iPos_enh-Core					
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154415	Correction on T340 handling	HTC Corporation	draftCR	36.331	12.7.0			A		Rel-12	LTE_eDDA-Core					
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	not treated		R2-154416	Refine positioning of UE with assistance by nearby WLAN UEs	III	pCR							Rel-13	UTRA_LTE_iPos_enh-Core				moved from 7.13.1 to 7.14.1	
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154417	Further discussion on cell selection reselection parameters in EC	HTC Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154418	LCP Modification for LAA Scell	ZTE Corporation	discussion							Rel-13	LTE_LAA-Core					
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154419	Introducing the LCID for new A/D MAC CE	Samsung Telecommunications	draftCR	36.321	12.7.0			B		Rel-13	LTE_CA_enh_b5C-Core				wrong spec ver number used in CR cover; it should be 12.7.0	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154420	On introducing the LCID for new A/D MAC CE	Samsung Telecommunications	discussion	36.321						Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154421	Remaining Issues for Idle Mode DRX Extension in LTE	MediaTek Inc.	discussion							Rel-13	LTE_extDRX-Core					eDRX
07.09.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-154422	Remaining Issues for Connected Mode DRX Extension in LTE	MediaTek Inc.	discussion							Rel-13	LTE_extDRX-Core					eDRX
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-154423	C-RNTI collision problem in Rel-13 CA enhancements	Samsung Telecommunications	discussion							Rel-13	LTE_CA_enh_b5C-Core					
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154424	Paging for NB-IoT	MediaTek Inc.	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: User Plane aspects	Yes	not treated		R2-154425	DRX enhancements for Rel-13 low complexity MTC	Samsung Telecommunications	discussion	36.321						Rel-13	LTE_MTCe2_L1-Core					
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154426	Consideration on QoS control in LWA	ZTE Corporation	discussion							Rel-13	LTE_WLAN_radio-Core					
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154427	Paging occasion calculation for eDRX operation in idle mode	Nokia Networks	discussion							Rel-13	LTE_extDRX-Core					eDRX
07.04.7	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: other	Yes	not treated		R2-154428	Overview on the overall procedure in Rel-13 low complexity MTC	Samsung Telecommunications	discussion	36.331						Rel-13	LTE_MTCe2_L1-Core					
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154429	Usecases for LTE-WLAN Interworking Enhancement	ZTE Corporation	discussion							Rel-13	LTE_WLAN_radio-Core					
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154430	Paging for non-LC UE capable of EC operation	Samsung Telecommunications	discussion							Rel-13	LTE_MTCe2_L1-Core					

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07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154431	PF and PO for Rel-13 low complexity MTC	Samsung Telecommunications	discussion	36.304						Rel-13	LTE_MTCe2_L1-Core				
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	not treated		R2-154432	Procedure and Configuration for GBR Traffic QOS Verification	ZTE Corporation	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	noted		R2-154433	SI update in Rel-13 eMTC	Samsung Telecommunications	discussion	36.331						Rel-13	LTE_MTCe2_L1-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154434	Measurement rules supporting Cell Specific Priority	LG Electronics France	discussion							Rel-13	LTE_MC_load-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154435	Signalling for Rel-13 eDRX support	Samsung Telecommunications	discussion							Rel-13	LTE_extDRX-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154436	CR to 36304 Measurement rules supporting CSP	LG Electronics France	draftCR	36.304	12.6.0			B		Rel-13	LTE_MC_load-Core				wrong spec number used in CR cover; it should be 12.6.0
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154437	RS-SINR measurement condition triggered by RSRQ measurement for load balancing and a TP	LG Electronics France	discussion							Rel-13	LTE_MC_load-Core				
07.09.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-154438	How to apply the extended DRX in the connected mode	Samsung Telecommunications	discussion	36.321						Rel-13	LTE_extDRX-Core				
07.09.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-154439	Connected mode eDRX operation	Nokia Networks	discussion							Rel-13	LTE_extDRX-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted	late	R2-154440	Summary of email discussion 91#28	ZTE Corporation	report						summary of email discussion [91#28]	Rel-13	LTE_MC_load-Core				
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-154441	Behaviour of the UE-to-Network relay	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154442	On the ETWS/CMAS support in Rel-13 eDRX	Samsung Telecommunications	discussion	36.331						Rel-13	LTE_extDRX-Core				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154443	Connection and communication with relay	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.3	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Connection establishment	Yes	not treated		R2-154444	When to switch data path	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154445	Discussion on RSSI measurement reporting	HTC Corporation	discussion							Rel-13	LTE_LAA-Core				
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	not treated		R2-154446	On handling MDT measurement results impacted by IDC	Samsung Telecommunications	discussion	36.331						Rel-13	LTE_eMDT2-Core				new WI code added
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154447	Open issues for paging	LG Electronics France	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.7	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: other	Yes	not treated		R2-154448	Considerations on coverage enhancement level	LG Electronics France	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154449	Update of battery life evaluation for light S1 architecture	ZTE Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	No	withdrawn		R2-154450	SI update for eDRX	Nokia Networks	discussion							Rel-13	LTE_extDRX-Core				
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	postponed		R2-154451	Discussion on sCellDeactivationTiemr	HTC Corporation	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154452	Exception report latency evaluation for light S1 architecture	ZTE Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154453	Discussion on LTE UP protocol for NB-IoT	ZTE Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154454	Discussion on paging procedure for NB-IoT	ZTE Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	noted		R2-154455	Issues on reporting MDT measurement results per QCI	LG Electronics Inc.	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	revised		R2-154456	36.300 CR for capturing B5C and PUCCH on SCell	Nokia Networks, NTT DOCOMO, INC.	draftCR	36.300	13.1.0			B		Rel-13	LTE_CA_enh_b5C-Core		R2-154982		wrong spec number used in CR cover; it should be 13.1.0
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	revised		R2-154457	Running 36.331 CR for capturing B5C and PUCCH on Scell	Nokia Networks	draftCR	36.331	12.7.0			B		Rel-13	LTE_CA_enh_b5C-Core		R2-154984		CR & rev number should be removed in CR cover; wrong spec version number used
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-154458	RRC CR open items	Nokia Networks	other							Rel-13	LTE_CA_enh_b5C-Core				wrong Type used; it should be type discussion
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154459	Introduction of Multiple NS and Pmax	Nokia Networks	draftCR	36.331	10.17.0			B		Rel-10	TEI10				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154460	Introduction of Multiple NS and Pmax	Nokia Networks	draftCR	36.331	11.12.0			A		Rel-11	TEI10				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154461	Introduction of Multiple NS and Pmax	Nokia Networks	draftCR	36.331	12.7.0			A		Rel-12	TEI10				wrong spec ver number used in CR cover; it should be 12.7.0
07.16.3.1	LTE Rel-13: WI: Narrowband IOT: User Plane: Random Access	Yes	noted		R2-154462	Random Access Procedure for NB-IoT	MediaTek Inc.	discussion							Rel-13	NB_IOT-Core				new WI code added
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-154463	Clarification on SR prohibit timer	NEC Corporation	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154464	SFN/subframe offset reporting	NEC Corporation	discussion							Rel-13	LTE_dualC_enh-Core				moved from 7.8.2 to 7.8.1
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154465	Coverage enhancement information for MTC paging	NEC Corporation	discussion							Rel-13	LTE_MTCe2_L1-Core				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-154466	Handling of unmatched ACDC category	NEC Corporation	discussion							Rel-13	ACDC-RAN-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154467	Impacts on system change acquisition for eDRX and transmission of H-SFN.	LG Electronics Inc.	discussion							Rel-13	LTE_extDRX-Core				
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-154468	Configuration for cross-carrier scheduling for Rel-13 UEs	Samsung Telecommunications	discussion	36.331						Rel-13	LTE_CA_enh_b5C-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154469	Restriction of LWA depending on WLAN status	LG Electronics Inc.	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154470	Blind WLAN interworking command	LG Electronics Inc.	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154471	WLAN measurement framework	LG Electronics Inc.	discussion							Rel-13	LTE_WLAN_radio-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154472	Channel selection based on RSSI measurement	LG Electronics Inc.	discussion							Rel-13	LTE_LAA-Core				
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-154473	SC-PTM service continuity in RRC CONNECTED	LG Electronics Inc.	discussion							Rel-13	LTE_SC_PTM-Core				
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-154474	SC-PTM MTCH reception	LG Electronics Inc.	discussion							Rel-13	LTE_SC_PTM-Core				
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-154475	SC-PTM MCCH reception	LG Electronics Inc.	discussion							Rel-13	LTE_SC_PTM-Core				

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07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154476	Discussion on LAA SCell Activation and Deactivation	KT Corporation	discussion							Rel-13	LTE_LAA-Core					
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	noted		R2-154477	NB-IOT Mobility and measurements	Ericsson	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154478	NB-IOT Paging and DRX	Ericsson	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-154479	Extended DRX in Idle mode	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core					UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	revised		R2-154480	LS on extended DRX in Idle mode in UMTS	Ericsson	LS out							Rel-13	UTRA_SDATA_POWSAV-Core		R2-154941			UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	No	withdrawn		R2-154481	Introduction of extended DRX in Idle mode	Ericsson	CR	25.300	12.4.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				CR will not be treated in this bis meeting	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	No	withdrawn		R2-154482	Introduction of extended DRX in Idle mode	Ericsson	CR	25.304	12.6.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				CR will not be treated in this bis meeting	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	No	withdrawn		R2-154483	Introduction of extended DRX in Idle mode	Ericsson	CR	25.331	13.0.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				CR will not be treated in this bis meeting	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	No	withdrawn		R2-154484	Introduction of eDRX timestamp	Ericsson	CR	25.331	13.0.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				CR will not be treated in this bis meeting	UMTS
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	noted		R2-154485	Return into I-eDRX	Ericsson	discussion							Rel-13	UTRA_SDATA_POWSAV-Core					UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	revised		R2-154486	LS on enabling return into extended DRX in Idle mode for UMTS	Ericsson	LS out							Rel-13	UTRA_SDATA_POWSAV-Core		R2-154942			UMTS
11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	noted		R2-154487	Access Groups based access control enhancements	Ericsson	discussion							Rel-13	TEI13					UMTS
11.11	UTRA Rel-13: UMTS TEI13 enhancements	No	withdrawn		R2-154488	Access Groups based access control enhancements	Ericsson	CR	25.300	12.4.0			B		Rel-13	TEI13, EDCH_enh-Core				CR will not be treated in this bis meeting	UMTS
11.11	UTRA Rel-13: UMTS TEI13 enhancements	No	withdrawn		R2-154489	Access Groups based access control enhancements	Ericsson	CR	25.306	12.6.0			B		Rel-13	TEI13, EDCH_enh-Core				CR will not be treated in this bis meeting	UMTS
11.11	UTRA Rel-13: UMTS TEI13 enhancements	No	withdrawn		R2-154490	Access Groups based access control enhancements	Ericsson	CR	25.331	13.0.0			B		Rel-13	TEI13, EDCH_enh-Core				CR will not be treated in this bis meeting	UMTS
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	noted		R2-154491	Potential protocol enhancement for Fast uplink access	Nokia Networks	discussion							Rel-13	FS_LTE_LATRED					Latency
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	agreed		R2-154492	Introduction of PUCCH on SCell in CA	NTT DOCOMO INC.	draftCR	36.302	12.5.0			B	in principle agreed in RAN2#91bis	Rel-13	LTE_CA_enh_b5C-Core					LTE UP
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	not treated		R2-154493	Introduction of extended DRX in Idle mode	Ericsson	draftCR	25.300	12.4.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				wrong WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	not treated		R2-154494	Introduction of extended DRX in Idle mode	Ericsson	draftCR	25.304	12.6.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				wrong WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	not treated		R2-154495	Introduction of extended DRX in Idle mode	Ericsson	draftCR	25.331	13.0.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				wrong WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"	UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	not treated		R2-154496	Introduction of eDRX timestamp	Ericsson	draftCR	25.331	13.0.0			B		Rel-13	UTRA_SDATA_POWSAV-Core				wrong WI code used in CR cover; it should be "UTRA_SDATA_POWSAV-Core"	UMTS
11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated		R2-154497	Access Groups based access control enhancements	Ericsson	draftCR	25.300	12.4.0			B		Rel-13	TEI13, EDCH_enh-Core					UMTS
11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated		R2-154498	Access Groups based access control enhancements	Ericsson	draftCR	25.306	12.6.0			B		Rel-13	TEI13, EDCH_enh-Core					UMTS
11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	not treated		R2-154499	Access Groups based access control enhancements	Ericsson	draftCR	25.331	13.0.0			B		Rel-13	TEI13, EDCH_enh-Core				wrong spec ver number used in CR cover; it should be 13.0.0	UMTS
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154500	RAN2 issues for LTE V2V	ETRI	other							Rel-13	FS_LTE_V2X				wrong Type used; it should be type discussion	V2X
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154501	Measurement configurations for LAA	Sharp	discussion							Rel-13	LTE_LAA-Core					
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	not treated		R2-154502	Supporting ACDC access control in UTRAN	Ericsson LM	draftCR	25.304	12.6.0			B		Rel-13	ACDC-RAN-Core					UMTS
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not pursued		R2-154503	Correction to application of a NS value in RRC_CONNECTED	HTC Corporation	draftCR	36.331	10.18.0			F		Rel-10	LTE_CA-Core				CR number should be removed in CR cover	
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154504	NB-IOT - Overview on Reusing of LTE L2/L3	Huawei, Hisilicon, Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154505	NB-IOT - Paging Optimization and Enhancement	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	No	withdrawn		R2-154506	NB-IOT - Discussion on Paging Occasion	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154507	NB-IOT - Design of Message Reading Indicator	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	noted		R2-154508	NB-IOT - Cell Selection/Reselection and Measurement	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.1	LTE Rel-13: WI: Narrowband IOT: User Plane: Random Access	Yes	noted		R2-154509	NB-IOT - Random Access Process	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154510	NB-IOT - RLC Layer Functions	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154511	NB-IOT - PDCP Layer Functions	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154512	NB-IOT - Scheduling Design	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154513	NB-IOT - Coverage Class Decision and Adaptation	Huawei, Hisilicon	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154514	NB-IOT - Architecture Overview	Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.1	LTE Rel-13: WI: Narrowband IOT: Control Plane: System Information	Yes	not treated		R2-154515	NB-IOT - Broadcast of System Information	Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	not treated		R2-154516	NB-IOT - RRC Layer Overview	Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	noted		R2-154517	NB-IOT - Idle Mode Procedure Overview	Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154518	NB-IOT - MAC Layer Overview	Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154519	NB-IOT - HARQ Overview	Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154520	NB-IOT - DRX in RRC_CONNECTED Mode	Neul	discussion							Rel-13	NB_IOT-Core				new WI code added	NB-IoT
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154521	Correction to application of a NS value in RRC_CONNECTED	HTC Corporation	draftCR	36.331	11.13.0			A		Rel-11	LTE_CA-Core					
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	not treated		R2-154522	Introduce a new SIB using value tag for supporting ACDC	Ericsson LM	draftCR	25.331	13.0.0			B		Rel-13	ACDC-RAN-Core				wrong spec version number used in CR cover	UMTS
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154523	Correction to application of a NS value in RRC_CONNECTED	HTC Corporation	draftCR	36.331	12.7.0			A		Rel-12	LTE_CA-Core					

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06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not pursued		R2-154524	Clarification on support of extened wait time	HTC Corporation	draftCR	36.306	10.14.0			F		Rel-10	NIMTC-RAN_overload				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154525	Clarification on support of extened wait time	HTC Corporation	draftCR	36.306	11.12.0			A		Rel-11	NIMTC-RAN_overload				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154526	Clarification on support of extened wait time	HTC Corporation	draftCR	36.306	12.6.0			A		Rel-12	NIMTC-RAN_overload		R2-154970		
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154527	Overall CP/UP Aspects	Samsung Electronics Co., Ltd	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.1	LTE Rel-13: WI: Narrowband IOT: Control Plane: System Information	Yes	not treated		R2-154528	Discussion on System Information Design	Samsung Electronics Co., Ltd	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154529	Discussion on Paging Mechanism	Samsung Electronics Co., Ltd	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	noted		R2-154530	Cell Selection and Reselection for NB-IOT	Samsung Electronics Co., Ltd	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.3.1	LTE Rel-13: WI: Narrowband IOT: User Plane: Random Access	Yes	noted		R2-154531	Discussion on Random Access Procedure	Samsung Electronics Co., Ltd	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	postponed		R2-154532	Design Considerations on User Plane	Samsung Electronics Co., Ltd	discussion							Rel-13	NB_IOT-Core				new WI code added
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154533	Supporting MU-MIMO in enhanced uplink SPS transmission	Lenovo (Beijing) Ltd	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154534	The Impact of Latency Reduction on UL SPS	ASUSTEK COMPUTER (SHANGHAI)	discussion							Rel-13	FS_LTE_LATRED				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-154535	Potential coverage issue on multiple NS/P-Max	NTT DOCOMO, INC.	discussion							Rel-10	LTE-L23, TEI10				
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	noted		R2-154536	ACDC System Information Broadcast implementation in UTRAN	Ericsson LM	discussion							Rel-13	ACDC-RAN-Core				
11.07	UTRA Rel-13: WI: Application specific Congestion control	Yes	not treated		R2-154537	Introduce a new SIB using Expiration Timer for supporting ACDC	Ericsson LM	draftCR	25.331	13.0.0			B		Rel-13	ACDC-RAN-Core				wrong spec ver number used in CR cover; it should be 13.0.0
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	noted		R2-154538	Discussion on Contention Resolution for Random Access due to Sidelink Data Arrival	ASUSTEK COMPUTER (SHANGHAI), LG Electronics, Huawei, HiSilicon	discussion							Rel-13	TEI13				
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	not treated		R2-154539	Discussion on Contention Resolution for Random Access due to Sidelink Data Arrival	ASUSTEK COMPUTER (SHANGHAI), LG Electronics, Huawei, HiSilicon	draftCR	36.321	12.7.0			C		Rel-13	LTE_ D2D_Prox-Core, TEI13				wrong WI code used in CR cover: TEI13 needs to be added
07.16.3.1	LTE Rel-13: WI: Narrowband IOT: User Plane: Random Access	Yes	noted		R2-154540	Random Access procedure for Narrowband IOT	ASUSTEK COMPUTER (SHANGHAI)	discussion							Rel-13	NB_IOT-Core				new WI code added
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	not pursued		R2-154541	Configuraton for RoHC profiles of STCH	Huawei, HiSilicon	draftCR	36.331	12.7.0			F		Rel-12	LTE_D2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154542	Discussion on Inter-frequency UE-to-Network relay	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-154543	Remaining issues for ProSe UE-to-Network relay procedure	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154544	Priority handling for UE-to-Network relay	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154545	L2 impacts of ProSe one-to-one communication	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-154546	Resource Configuration for Inter-carrier Discovery transmission	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154547	Remaining issues for sidelink gap	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154548	Priority handling based on ProSe Per Packet Priority	Huawei, HiSilicon	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	not treated		R2-154549	UL Scheduling Delay Measurement	Qualcomm Incorporated	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154550	Paging of Rel13 low complexity UE and/or UE in EC mode	Nokia Networks	other							Rel-13	LTE_MTCe2_L1-Core				wrong Type used; it should be type discussion
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-154551	SC-PTM Configuration	Qualcomm Incorporated	discussion							Rel-13	LTE_SC_PTM-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154552	System information update for LC-MTC UEs or/and UE in EC mode	Nokia Networks	other							Rel-13	LTE_MTCe2_L1-Core				wrong Type used; it should be type discussion
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-154553	SC-PTM Service Continuity	Qualcomm Incorporated	discussion							Rel-13	LTE_SC_PTM-Core				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154554	Further Discussion on SPS with Consideration to Resource Efficiency	ETRI	discussion							Rel-13	FS_LTE_LATRED				
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: User Plane aspects	Yes	not treated		R2-154555	Timer handling for LC-MTC UEs or/and UE in EC mode	Nokia Networks	other							Rel-13	LTE_MTCe2_L1-Core				wrong Type used; it should be type discussion
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154556	Connected mobility for Rel13 UEs in EC mode	Nokia Networks	other							Rel-13	LTE_MTCe2_L1-Core				wrong Type used; it should be type discussion
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154557	RLM/RLF for Rel13 low complexity UE or/and UE in EC mode	Nokia Networks	other							Rel-13	LTE_MTCe2_L1-Core				wrong Type used; it should be type discussion
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154558	Cell reselection for coverage enhanced UEs	Nokia Networks	other							Rel-13	LTE_MTCe2_L1-Core				wrong Type used; it should be type discussion
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154559	Random access procedure for enhanced coverage UEs	Nokia Networks	other							Rel-13	LTE_MTCe2_L1-Core				wrong Type used; it should be type discussion
07.03.4	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Other	Yes	not treated		R2-154560	SC-PTM counting mechanism	Polevio Company Limited	discussion							Rel-13	LTE_SC_PTM-Core				moved from 7.3.3 to 7.3.4
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154561	IDLE mode functionality for LTE/WLAN integration	Nokia Networks	other							Rel-13	LTE_WLAN_radio-Core				wrong Type used; it should be type discussion

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AI #	Agenda item	Upload ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154562	SI update for eDRX	Nokia Networks	discussion							Rel-13	LTE_extDRX-Core				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154563	Consideration on Heterogeneous TTIs in a Carrier	ETRI	discussion							Rel-13	FS_LTE_LATRED				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	noted		R2-154564	Remaining Issues on ACDC	LG Electronics Inc.	discussion							Rel-13	ACDC-RAN				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated	late	R2-154565	Inter-frequency discovery	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	withdrawn		R2-154566	Proposed CR to 36.331 on introduction of ACDC in LTE	LG Electronics Inc.	CR	36.331	12.7.0			B		Rel-13	ACDC-RAN				CR will not be treated in this bis meeting
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	revised	late	R2-154567	Latency analaysis of Uu based V2V	LG Electronics France	discussion							Rel-13	FS_LTE_V2X		R2-154887		
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154568	Considerations of NB-IOT requirements	Nokia Networks	other							Rel-13					wrong Type used; it should be type discussion
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated	late	R2-154569	Details of sidelink gap	LG Electronics France	discussion							Rel-13	sz\'\z\z\z\'\z\\				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated	late	R2-154570	Draft reply LS on ACDC mechanism	LG Electronics Inc.	LS out							Rel-13	ACDC-RAN				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	noted	late	R2-154571	Relay selection and reselection details	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated	late	R2-154572	Sync Reference UE selection upon Relay Selection	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated	late	R2-154573	Measurement and selection of reference cell for discovery	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	revised	late	R2-154574	Discovery out of coverage	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core		R2-154883		
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated	late	R2-154575	Prioritization of PC5-S	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated	late	R2-154576	Multiple SA transmissions	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	not treated	late	R2-154577	MDT with in-device interference	LG Electronics France	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	noted		R2-154578	High Priority Access for MMTEL voice, MMTEL video and SMS	LG Electronics Inc.	discussion							Rel-12	SCM_LTE-Core				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	noted		R2-154579	Study plan for V2X in RAN2	LG Electronics Inc.	Work Plan							Rel-13	FS_LTE_V2X				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated	late	R2-154580	Support of pre-emption	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	noted		R2-154581	Uu V2V scenarios	LG Electronics Inc.	discussion							Rel-13	FS_LTE_V2X				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	revised		R2-154582	LAA Measurements and Carrier Selection Procedure	Sony	discussion							Rel-13	LTE_LAA-Core		R2-154885		
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154583	Cell Reselection for Enhanced Coverage	Sony	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-154584	Redistributing a fraction of idle mode UEs among carriers	Sony	discussion							Rel-13	LTE_MC_load-Core				
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	not treated		R2-154585	Stage3 impacts for connected eDRX up to 20 sec	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	No	withdrawn		R2-154586	Introduction of idle mode redistribution among carriers	Sony	CR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core				CR will not be treated in this bis meeting
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	noted		R2-154587	Impact due to Gb / S1-Lite Interface choice	Sony	discussion							Rel-13	NB_IOT-Core				new WI code added
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	not treated		R2-154588	Mobility considerations for connected eDRX up to 20s	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core				
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	not treated		R2-154589	[Draft] LS on measurements requirements on eDRX in connected	Huawei, HiSilicon	LS out							Rel-13	UTRA_SDATA_POWSAV-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154590	Introduction of idle mode redistribution among carriers	Sony	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core				wrong spec ver number used in CR cover; it should be 12.7.0
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	noted		R2-154591	Further considerations for timer based eDRX in idle	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core				
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-154592	Dual connectivity with 32 CCs	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154593	PDCP Status PDU with PDCP SN extension	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	not treated		R2-154594	Type 2 PH reporting with PUCCH on Scell	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core				
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	noted		R2-154595	Stage 3 impacts for Idle eDRX	Huawei, HiSilicon	discussion							Rel-13	UTRA_SDATA_POWSAV-Core				
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-154596	draft pCR to 25.993 V12.0.0 on introduction of new RAB combination for EVS over CS	Huawei, HiSilicon	discussion							Rel-13	EVSoCS_UTRAN-Core				
11.03	UTRA Rel-13: WI: Support of EVS over UTRAN CS	Yes	noted		R2-154597	Discussion on reusing TFC control for EVS over CS	Huawei, HiSilicon	discussion							Rel-13	EVSoCS_UTRAN-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-154598	Inter-PLMN coordination for discovery transmission	Telecom Italia, Ericsson	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154599	Follow-up discussion on SFNsf reporting	NTT DOCOMO INC.	discussion						Related to R2-154398	Rel-13	LTE_dualC_enh-Core				
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154600	Discussion and evaluation on the same PCI case for OTDOA enhancements using time-domain separation method	Huawei, HiSilicon	discussion	36.355	12.4.0					Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	withdrawn		R2-154601	CR on using time-domain separation method to distinguish small cells with same PCI	Huawei, HiSilicon	CR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				CR will not be treated in this bis meeting
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154602	Discussion and evaluation on using TP-specific signal sequences to distinguish small cells with same PCI	Huawei, HiSilicon	discussion	36.355	12.4.0					Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	withdrawn		R2-154603	CR on using virtual PCI to distinguish small cells with same PCI	Huawei, HiSilicon	CR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				CR will not be treated in this bis meeting
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154604	Evaluation and discussion on reduce RSTD quantization error	Huawei, HiSilicon	discussion	36.355	12.4.0					Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	withdrawn		R2-154605	CR for reduce RSTD quantization error	Huawei, HiSilicon	CR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				CR will not be treated in this bis meeting
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154606	Discussion and evaluation on the same PCI case for E-CID enhancements	Huawei, HiSilicon	discussion	36.355	12.4.0					Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	withdrawn		R2-154607	CR for using CSI-RSRP measurements to distinguish small cells with same PCI	Huawei, HiSilicon	CR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				CR will not be treated in this bis meeting

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AI #	Agenda item	Upl oad ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154608	Discussion and evaluation on using PRS and CRS for RSTD measurement	Huawei, HiSilicon	discussion	36.355	12.4.0					Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	noted		R2-154609	Planning of the Rel-13 RRC message and ASN.1 review for UTRA	Ericsson (Rapporteur)	discussion							Rel-13	TEI13				
11.11	UTRA Rel-13: UMTS TEI13 enhancements	No	withdrawn		R2-154610	Planning of the Rel-13 RRC message and ASN.1 review for UTRA	Ericsson LM	discussion							Rel-13	TEI13				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154611	General Analysis of Scenarios for V2X Services	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_V2X				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154612	Potential RAN2 Issues and Enhancements for PC5 transport of V2X services	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_V2X				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154613	Feasibility study for Uu transport for V2V service	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_V2X				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154614	Enhancement for Uu transport of V2V Service	Huawei, HiSilicon	discussion							Rel-13	FS_LTE_V2X				
07.04.7	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: other	Yes	not treated	late	R2-154615	Considerations on EC level change in connected mode	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core				
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	noted		R2-154616	Discussion on certain aspects of Seamless URA_PCH to CELL_FACH transition	Ericsson LM	discussion							Rel-13	UTRA_EDL_L23-Core				
07.04.7	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: other	Yes	withdrawn		R2-154617	Considerations on EC level change in connected mode	CATT	discussion							Rel-13	LTE_MTCe2_L1-Core				
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated	late	R2-154618	Introduction of Seamless URA_PCH to CELL_FACH transition	Ericsson LM	draftCR	25.308	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated	late	R2-154619	Introduction of Seamless URA_PCH to CELL_FACH transition	Ericsson LM	draftCR	25.319	12.3.0			B		Rel-13	UTRA_EDL_L23-Core				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not pursued		R2-154620	Correction of need code definition terminology	Ericsson	draftCR	36.331	10.18.0			F		Rel-10	TEI10				wrong WI code used in CR cover: it should be "TEI10"
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154621	Distributing UEs to multiple carries	Huawei, HiSilicon	draftCR	36.304	12.6.0			B		Rel-13	LTE_MC_load-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	revised		R2-154622	Distributing UEs to multiple carries	Huawei, HiSilicon	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core		R2-154882		
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-154623	Distributing UEs to multiple carries	Huawei, HiSilicon	discussion							Rel-13	LTE_MC_load-Core				
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated	late	R2-154624	Introduction of Seamless URA_PCH to CELL_FACH transition	Ericsson LM	draftCR	25.321	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				wrong spec ver number used in CR cover; it should be 13.0.0
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154625	Correction of need code definition terminology	Ericsson	draftCR	36.331	11.13.0			A		Rel-11	TEI10				wrong WI code used in CR cover: it should be "TEI10"
11.01.2	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Seamless URA_PCH to CELL_FACH transitions	Yes	not treated	late	R2-154626	Introduction of Seamless URA_PCH to CELL_FACH transition	Ericsson LM	draftCR	25.331	13.0.0			B		Rel-13	UTRA_EDL_L23-Core				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154627	Correction of need code definition terminology	Ericsson	draftCR	36.331	12.7.0			A		Rel-12	TEI10		R2-154971		wrong WI code used in CR cover: it should be "TEI10"
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-154628	Cell-specific prioritization for load balancing	Ericsson	discussion							Rel-13	LTE_MC_load-Core				
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154629	WLAN measurement reporting	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154630	Layer-3 filtering for WLAN measurements	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	not treated		R2-154631	Introducing WLAN measurements	Ericsson	draftCR	36.331	12.7.0			B		Rel-13	LTE_WLAN_radio-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154632	UE capabilities for LTE-WLAN interworking and aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154633	Connection failure report	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154634	Further discussion on WLAN interworking for Rel-13	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154635	Threshold based WLAN interworking	Ericsson	draftCR	36.331	12.7.0			B		Rel-13	LTE_WLAN_radio-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154636	Parameter handling for WLAN interworking	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154637	Parameter handling for WLAN interworking	Ericsson	draftCR	36.331	12.7.0			B		Rel-13	LTE_WLAN_radio-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154638	Parameter handling for WLAN interworking	Ericsson	draftCR	36.304	12.6.0			B		Rel-13	LTE_WLAN_radio-Core				wrong spec ver number used in CR cover; it should be 12.6.0
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154639	LCIDs for extended MAC CEs for CA enhancements beyond 5 CCs	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-154640	Valid SR resources	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-154641	RSSI histogram reporting for LAA	Ericsson	discussion							Rel-13	LTE_LAA-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154642	Introducing RSSI in for LAA	Ericsson	draftCR	36.331	12.7.0			B		Rel-13	LTE_LAA-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-154643	Time To Trigger for LAA	Ericsson	discussion							Rel-13	LTE_LAA-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-154644	Layer-3 filtering for LAA	Ericsson	discussion							Rel-13	LTE_LAA-Core				
07.08.2	LTE Rel-13: WI: Dual Connectivity Enhancements: UP	Yes	not treated		R2-154645	Further details for PDCP data transfer procedure for uplink bearer split	Ericsson	discussion							Rel-13	LTE_dualC_enh-Core				
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154646	Discussion on SFN and subframe timing difference for DC enhancements	Ericsson	discussion							Rel-13	LTE_dualC_enh-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154647	Cell-specific prioritization for idle mode load balancing	Ericsson	draftCR	36.304	12.6.0			B		Rel-13	LTE_MC_load-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154648	Cell-specific prioritization for idle mode load balancing (Alt 1)	Ericsson	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154649	Cell-specific prioritization for idle mode load balancing (Alt 2)	Ericsson	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core				
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154650	Update to DRX Behavior in support of Asynchronous UL HARQ	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_LAA-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154651	Running RRC CR for Rel-13 low complexity UEs and coverage enhancements	Ericsson	draftCR	36.331	12.7.0			B		Rel-13	LTE_MTCe2_L1-Core				

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07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154652	Handling of the System Information Update for I-eDRX UEs	INTERDIGITAL COMMUNICATIONS	discussion							Rel-13	LTE_extDRX-Core					eDRX
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	No	withdrawn		R2-154653	RRC details for Rel-13 low complexity UEs and coverage enhancements	Ericsson GmbH, Eurolab	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154654	Control plane aspects for LWA	NEC	discussion							Rel-13	LTE_WLAN_radio-Core					
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted		R2-154655	RRC details for Rel-13 low complexity UEs and coverage enhancements	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core		R2-154904			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154656	Flow control for LWA	NEC	discussion							Rel-13	LTE_WLAN_radio-Core					
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154657	SIB reception across SI-windows for LC/EC MTC UE	NTT DOCOMO INC.	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-154658	Multiplexing options in SC-PTM configuration	NEC	discussion							Rel-13	LTE_SC_PTM-Core					SC-PTM
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	not treated		R2-154659	On flow control feedback for LTE WLAN radio interworking/aggregation	TCL Communication Ltd.	discussion							Rel-13	LTE_WLAN_radio_legacy-Core				new WI code added	
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	noted		R2-154660	Layer3 filtering behaviour in LAA	NTT DOCOMO INC.	discussion							Rel-13	LTE_LAA-Core					
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154661	On flow control feedback for LTE WLAN radio interworking/aggregation	TCL Communication Ltd.	discussion							Rel-13	LTE_WLAN_radio-Core					
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	not treated		R2-154662	ROHC and ciphering for SC-PTM	NEC	discussion							Rel-13	LTE_SC_PTM-Core					SC-PTM
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	noted		R2-154663	Clarification for LC/EC and Non-LC/EC UE supporting eDRX	NTT DOCOMO INC.	discussion							Rel-13	LTE_extDRX-Core					eDRX
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	revised		R2-154664	Corrections to Sidelink in TS 36.302	Intel Corporation	draftCR	36.302	12.5.0			F		Rel-13	LTE_D2D_Prox-Core		R2-154974			
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154665	Introduction of OTDOA enhancements	Intel Corporation	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				wrong WI code used in CR cover	
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154666	Control signalling flows for LWA	Intel Corporation	discussion							Rel-13	LTE_WLAN_radio-Core					
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154667	Layer-2 protocol stack for PC5-based V2X	Ericsson	discussion							Rel-13	FS_LTE_V2X					V2X
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154668	Traffic characteristics of LTE-based V2X	Ericsson	discussion							Rel-13	FS_LTE_V2X					V2X
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154669	Traffic management and resource allocation in V2X	Ericsson	discussion							Rel-13	FS_LTE_V2X					V2X
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154670	V2X scenarios	Ericsson	discussion							Rel-13	FS_LTE_V2X					V2X
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	revised		R2-154671	DRAFT LS on V2X message characteristics	Ericsson	LS out						LS answer to LSin R2-154008	Rel-13	FS_LTE_V2X		R2-154950			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-154672	On CRNTI collisions	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core					
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154673	Open issues on L2 UP headers extension	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	postponed		R2-154674	Extending MAC protocol header	Ericsson	draftCR	36.321	12.7.0			B		Rel-13	LTE_CA_enh_b5C-Core				wrong spec ver number used in CR cover; it should be 12.7.0	LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154675	Extending RLC protocol header	Ericsson	draftCR	36.322	12.2.0			B		Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	not treated		R2-154676	Extending PDCP protocol header	Ericsson	draftCR	36.323	12.4.0			B		Rel-13	LTE_CA_enh_b5C-Core					LTE UP
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-154677	Remaining issues of initiation of ProSe UE-to-Network Relays	Kyocera	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154678	Consideration of bearer mapping for ProSe UE-to-Network Relays	Kyocera	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154679	Possible issue on access restriction of intra-PLMN and coordinated inter-PLMN cells	Kyocera	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154680	Further details of sidelink gap for direct discovery	Kyocera	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154681	Idle mode UE behaviour with Extended DRX	Kyocera	discussion							Rel-13	LTE_extDRX-Core					eDRX
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	noted		R2-154682	UTRAN-to-EUTRAN HO transfer of UE EUTRA capabilities	Alcatel-Lucent Telecom Ltd	discussion							Rel-12						
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	noted		R2-154683	Potential solutions for Logged MDT under IDC interference	Kyocera	discussion							Rel-13	LTE_eMDT2-Core				new WI code added	MDT
11.04	UTRA Rel-13: WI: Study on Network-Assisted Interference Cancellation and Suppression for UMTS	Yes	noted		R2-154684	Offloading for NAICS	Ericsson LM	discussion							Rel-13	UTRA_NAICS-Core				new WI code added	UMTS
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	noted		R2-154685	Configuration and report mechanism for UL PDCP queuing delay measurement	Kyocera	discussion							Rel-13	LTE_eMDT2-Core				new WI code added	MDT
04.02	Joint UMTS/LTE: Rel-12 WIs/SIs	Yes	not treated		R2-154686	Enabling UTRAN to E-UTRAN HO without forwarding UE-EUTRA-Capability	Alcatel-Lucent Telecom Ltd	draftCR	36.331	12.7.0			B		Rel-12	TEI12				wrong spec ver number used in CR cover; it should be 12.7.0	
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154687	The impact of RS-SINR on RAN2 specification	Nokia Networks	discussion							Rel-13	LTE_MC_load-Core					MCLD
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154688	Measurement report mechanisms for RSSI	Kyocera	discussion							Rel-13	LTE_LAA-Core					
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154689	Considerations on RACH for LC-MTC	Alcatel-Lucent Telecom Ltd	discussion							Rel-13	LTE_MTCe2_L1-Core					
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154690	Possible compromise solution for re-distribution of a fraction of users	Kyocera	discussion							Rel-13	LTE_MC_load-Core					MCLD
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-154691	Paging based "One-shot" redistribution mechanism	Nokia Networks	discussion							Rel-13	LTE_MC_load-Core					MCLD
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154692	Paging-triggered cell specific prioritization	Kyocera	discussion							Rel-13	LTE_MC_load-Core					MCLD
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	not treated		R2-154693	Service continuity with SC-PTM	Kyocera	discussion							Rel-13	LTE_SC_PTM-Core					SC-PTM
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154694	RAN assistance parameters for IDLE UE in Interworking Enhancement	Kyocera	discussion							Rel-13	LTE_WLAN_radio-Core					
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154695	Relay UE Selection and Reselection	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154696	Considerations on the ProSe Layer-2 ID conflict issue	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-154697	RAN2 aspects of supporting out-of-coverage discovery	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	not treated		R2-154698	On gap request report and trigger	ZTE	discussion							Rel-13	LTE_eD2D_Prox-Core					ProSe
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154699	Evaluation of the feasibility of Uu transport for V2V	ZTE	discussion							Rel-13	FS_LTE_V2X					V2X
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154700	Enhancements for eNB type RSU and UE type RSU	ZTE	discussion							Rel-13	FS_LTE_V2X					V2X
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154701	Some considerations on multi-cell multicast/broadcast for V2X	ZTE	discussion							Rel-13	FS_LTE_V2X					V2X

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07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154702	UE offload confirmation for RAN Controlled WLAN Interworking	Kyocera	discussion							Rel-13	LTE_WLAN_radio-Core				
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	revised		R2-154703	Extension of Frequency Priorities	Nokia Networks	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core		R2-154921		
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	revised		R2-154704	Extension of Frequency Priorities	Nokia Networks	draftCR	36.304	12.6.0			B		Rel-13	LTE_MC_load-Core		R2-154923		
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	withdrawn		R2-154705	UE based flow control for LTE-WLAN aggregation	MediaTek Inc., China Telecom	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154706	Discovery and selection of a network that provides cellular – WLAN aggregation	BROADCOM CORPORATION	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	withdrawn		R2-154707	On the relationship between Release-13 and Release-12 LTE-WLAN Interworking	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154708	Further discussion on WT addition procedure	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154709	WLAN User Plane Architecture Solution for LWA	BROADCOM CORPORATION	discussion							Rel-13	LTE_WLAN_radio-Core				
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	not treated		R2-154710	Some considerations for LTE-WLAN RAN level integration supporting legacy WLAN	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio_legacy-Core				new WI code added
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154711	Intdoduction of Dual Connectivity enhancements in Rel-13 (Alt.2)	NTT DOCOMO, INC.	draftCR	36.331	12.7.0			B		Rel-13	LTE_dualC_enh-Core				wrong spec ver number used in CR cover; it should be 12.7.0
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated	late	R2-154712	LPP signaling support for OTDOA/ECID enhancement	Ericsson	discussion							Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	noted		R2-154713	LTE-WLAN aggregation for support of legacy WLAN	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Broadcom Corporation, AT&T, NextNav, Blackberry UK Limited	discussion							Rel-13	LTE_WLAN_radio_legacy-Core				new WI code added
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	noted		R2-154714	IPsec Tunnelling for support of legacy WLAN	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Broadcom Corporation, AT&T, NextNav, BlackBerry UK Limited	discussion							Rel-13	LTE_WLAN_radio_legacy-Core				new WI code added
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154715	Discussion on SFN offset signalling	Alcatel-Lucent Telecom Ltd	discussion							Rel-13	LTE_dualC_enh-Core				
07.10.3	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: Handover latency enhancements	Yes	not treated		R2-154716	Discussion on reduction of handover interruption	Alcatel-Lucent Telecom Ltd	discussion							Rel-13	FS_LTE_LATRED				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154717	draftCR to correct UE messages to be sent only after security activation	Deutsche Telekom AG; Vodafone	draftCR	36.331	10.18.0			F		Rel-10	TEI10		R2-154964		source to TSG should be "R2"
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154718	draftCR to correct UE messages to be sent only after security activation	Deutsche Telekom AG, Vodafone	draftCR	36.331	11.13.0			A		Rel-11	TEI10				source to TSG should be "R2"; wrong WI code used and it should be "TEI10" as cat.A CR
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154719	draftCR to correct UE messages to be sent only after security activation	Deutsche Telekom AG, Vodafone	draftCR	36.331	12.7.0			A		Rel-12	TEI10				source to TSG should be "R2"; wrong WI code used and it should be "TEI10" as cat.A CR
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154720	Principles for NB-IoT: GERAN agreed Operator requirements on network sharing, cell barring and access control	Deutsche Telekom AG	discussion							Rel-13	NB_IOT-Core				new WI code added
07.05.1.4	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Other	Yes	not treated		R2-154721	Layer-2 ID conflict issues for ProSe one-to-one communication	ETRI	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154722	Draft Idle Mode specification review for NB-IoT	Deutsche Telekom AG, Huawei Technologies Co., Ltd., HiSilicon Technologies Co. Ltd, Neul Limited, Qualcomm Incorporated	discussion							Rel-13	NB_IOT-Core				new WI code added
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154723	Considerations on ProSe Per Packet Priority	ETRI	discussion							Rel-13	LTE_eD2D_Prox-Core				
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	noted		R2-154724	Some general RRC issues	Samsung Telecommunications	other	36.331	12.7.0					Rel-12					wrong Type used; it should be type discussion
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	not treated	late	R2-154725	Some general RRC issues	Samsung Telecommunications	draftCR	36.331	12.7.0			F		Rel-12	LTE_CA-Core, SPIA_IDC_LTE, TEI12				WI codes not fit with REL-12 CR, TEI12 needed
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154726	NB-IoT – Key requirements	QUALCOMM CDMA Technologies	discussion							Rel-13	NB_IOT-Core				new WI code added
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154727	RSSI channel occupancy measurement for LAA	Samsung Telecommunications	other							Rel-13	LTE_LAA-Core				wrong Type used; it should be type discussion
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154728	[DRAFT] Reply LS on 2 UL inter-band CA protection of GNSS	NTT DOCOMO, INC.	LS out						LS answer to LSin R2-153048	Rel-11	SPIA_IDC_LTE-Core		R2-154967		
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted	late	R2-154729	A harmonised CRS solution for Idle mode load distribution	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Samsung, LG Electronics, Intel Corporation	discussion							Rel-13	LTE_MC_load-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154730	Capturing RAN2 agreements on eWLAN (REL-13) in 36.331	Samsung Telecommunications	other	36.331	12.7.0					Rel-13	LTE_WLAN_radio-Core				wrong Type used; it should be type discussion
07.02.02.2	LTE Rel-13: WI: CA enhancements: CP & common aspects: PUCCH on SCell	Yes	not treated		R2-154731	Change of PUCCH SCell	Samsung	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-154732	UE capability size reduction	Samsung Telecommunications	other							Rel-13	LTE_CA_enh_b5C-Core				wrong Type used; it should be type discussion

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
11.08	UTRA Rel-13: WI: Indoor Positioning enhancements for UTRA and LTE	Yes	revised		R2-154733	RAT-Independent positioning enhancements	NextNav, Broadcom	draftCR	25.305	12.1.0			B		Rel-13	UTRA_LTE_iPos_enh-Core		R2-154959		wrong WI code used in CR cover; it should be "UTRA_LTE_iPos_enh-Core"
11.08	UTRA Rel-13: WI: Indoor Positioning enhancements for UTRA and LTE	Yes	revised		R2-154734	RAT-Independent positioning enhancements	NextNav	draftCR	25.331	13.0.0			B		Rel-13	UTRA_LTE_iPos_enh-Core		R2-154960		wrong spec number & WI code used in CR cover; it should be "UTRA_LTE_iPos_enh-Core"
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	revised		R2-154735	RAT-Independent positioning enhancements	NextNav	draftCR	36.305	12.2.0			B		Rel-13	UTRA_LTE_iPos_enh-Core		R2-154961		wrong WI code used in CR cover
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	revised		R2-154736	RAT-Independent positioning enhancements	NextNav	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core		R2-154962		wrong WI code used in CR cover
07.05	LTE Rel-13: WI: ProSe enhancements	Yes	postponed		R2-154737	Capturing RAN2 agreements on eSL (REL-13) in 36.331	Samsung Telecommunications	other	36.331	12.7.0					Rel-13	LTE_eD2D_Prox-Core				wrong Type used; it should be type discussion; moved to 7.5
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	not treated		R2-154738	Access Restriction for Unattended Data Traffic	Verizon	draftCR	36.331	12.7.0			C		Rel-13	TEI13				
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	noted		R2-154739	Support for both uplink and downlink over the IPsec tunnel	BlackBerry UK Limited, Alcatel-Lucent, Alcatel-Lucent Shanghai Bell	other							Rel-13	LTE_WLAN_radio_legacy-Core				wrong Type used; it should be type discussion
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	Yes	not treated		R2-154740	Study of shorter TTI for latency reduction	Ericsson	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	not treated		R2-154741	Layer 2 solutions for latency reduction	Ericsson	discussion							Rel-13	FS_LTE_LATRED				
07.10.1	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: L2 enhancements to reduce latency	Yes	noted		R2-154742	Skipping padding in SPS and dynamic grants	Ericsson	discussion							Rel-13	FS_LTE_LATRED				
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	Yes	noted	late	R2-154743	Email discussion report on [91#29][LTE/Latency] Evaluation results	Ericsson (Rapporteur)	report							Rel-13					
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	Yes	postponed	late	R2-154744	TR Text Proposal capturing outcome of [91#29][LTE/Latency] Evaluation results	Ericsson (Rapporteur)	pCR							Rel-13					
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-154745	MCCH modification for 1.4MHz	Ericsson	discussion							Rel-9	MBMS_LTE, TEI12				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not pursued		R2-154746	MCCH change notification for 1.4 MHz	Ericsson	pCR	36.331	12.6.0					Rel-13	MBMS_LTE, TEI13				wrong Type used; it should be "draftCR"
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	revised		R2-154747	White-list of cells for EUTRA measurement reporting	Ericsson	pCR	36.331	12.6.0					Rel-13	TEI13	R2-154980			wrong Type used; it should be "draftCR"
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	noted		R2-154748	LCIDs for Act/Deact and PHR MAC CEs	Nokia Networks	discussion							Rel-13	LTE_CA_enh_b5C-Core				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154749	MaxLayerMIMO in HandoverPreparationInformation	Ericsson	pCR	36.331	10.16.0					Rel-10	LTE-L23, TEI10		R2-154969		wrong Type used; it should be "draftCR"
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154750	MaxLayerMIMO in HandoverPreparationInformation	Ericsson	draftCR	36.331	11.13.0			F		Rel-11	LTE-L23, TEI11				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154751	MaxLayerMIMO in HandoverPreparationInformation	Ericsson	draftCR	36.331	12.7.0			A		Rel-12	LTE-L23, TEI11				wrong cat & WI code used in CR cover; it should be cat.A & LTE-L23, TEI11
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	noted		R2-154752	PDCP packet identifiers for WLAN in LWA	Cisco Systems	discussion							Rel-13	LTE_WLAN_radio-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154753	RSRP measurement for LAA	Motorola Mobility	discussion							Rel-13	LTE_LAA-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154754	Paging Transmission Window	Ericsson	discussion							Rel-13	LTE_extDRX-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154755	RSSI measurement for LAA	Motorola Mobility UK Ltd.	discussion							Rel-13	LTE_LAA-Core				
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154756	Reducing DRX Active Time in LAA	Motorola Mobility UK Ltd.	discussion							Rel-13	LTE_LAA-Core				
07.05.3	LTE Rel-13: WI: ProSe enhancements: ProSe discovery for inter-carrier and inter-PLMN	Yes	noted		R2-154757	Inter Frequency and Inter PLMN Discovery	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154758	Connected mode Mobility for LC and CE	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	not treated		R2-154759	Capability signalling for more than 5 carriers	Ericsson	discussion							Rel-13	LTE_CA_enh_b5C-Core				
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-154760	Partial and Out of Coverage Discovery	Qualcomm Incorporated	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154761	Signalling flows for LTE-WLAN aggregation over Xw and RRC	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154762	TP for signalling flows for LTE-WLAN aggregation over Xw and RRC	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154763	Mobility procedures for LTE-WLAN aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154764	Security for WLAN aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154765	Flow control in LTE-WLAN Aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154766	User plane aspects of LTE-WLAN aggregation	Ericsson	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154767	Draft LS on PDCP feedback and flow control in LTE-WLAN aggregation	Ericsson	LS out							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154768	Draft LS on EtherType allocation for PDCP packets	Ericsson	LS out							Rel-13	LTE_WLAN_radio-Core				
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	not treated		R2-154769	Overview of LTE-WLAN integration supporting legacy WLAN	Ericsson	discussion							Rel-13	LTE_WLAN_radio_legacy-Core				new WI code added
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Autonomous state transitions	Yes	noted		R2-154770	Enhanced RRC state transition based on Fast Dormancy procedure	BlackBerry UK Limited	discussion							Rel-13	UTRA_EDL_L23-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154771	Open issues on paging for MTC UE	INTERDIGITAL COMMUNICATIONS	other							Rel-13	LC_MTC_LTE				wrong Type used; it should be type discussion
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154772	L2-3 considerations for NB-IoT	Alcatel-Lucent	discussion							Rel-13	NB_IOT-Core				new WI code added
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154773	Remaining open issues for random access	INTERDIGITAL COMMUNICATIONS	other							Rel-13	LC_MTC_LTE				wrong Type used; it should be type discussion
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	noted		R2-154774	Applicability of RRC for NB-IoT	Alcatel-Lucent	discussion							Rel-13	NB_IOT-Core				new WI code added
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154775	Priority handling for D2D Communication Mode 2	INTERDIGITAL COMMUNICATIONS	other							Rel-13					wrong Type used; it should be type discussion
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	noted		R2-154776	Signalling support for SINR measurements	Ericsson	discussion							Rel-13	LTE_MC_load-Core				

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AI #	Agenda item	Upload ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154777	Clarification on FDD/TDD difference for UL CA IDC indication	Ericsson	draftCR	36.331	11.13.0			F		Rel-11	SPIA_IDC_LTE-Core		R2-154966		
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154778	Clarification on FDD/TDD difference for UL CA IDC indication	Ericsson	draftCR	36.331	12.7.0			A		Rel-12	SPIA_IDC_LTE-Core				wrong spec ver number used in CR cover; it should be 12.7.0
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	revised		R2-154779	Correction on categories in supportedBandCombination	Ericsson	draftCR	36.306	12.6.0			F		Rel-12	TEI12	R2-154972			
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	not treated		R2-154780	Signalling aspects of ACDC in E-UTRAN	Ericsson	discussion							Rel-13	ACDC-RAN-Core				
11.01.7	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Other	Yes	noted		R2-154781	Release of dedicated RNTIs	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core				
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	noted		R2-154782	feMDT todo	MediaTek Inc.	discussion						General doc, applicable to both 7.13.1 and 7.13.2	Rel-13	LTE_eMDT2-Core				new WI code added
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154783	UE redistribution for load balancing	MediaTek Inc.	discussion							Rel-13	LTE_MC_load-Core				
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	revised	late	R2-154784	Report of the email discussion [91#25][LTE/MTCe2]	MediaTek Inc.	discussion							Rel-13	LTE_MTCe2_L1-Core		R2-154888		
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154785	MIB for Rel-13 low complexity and coverage enhanced Ues	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	noted		R2-154786	SIB scheduling for Rel-13 low complexity and coverage enhanced Ues	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154787	System information update, valueTag and validity time	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154788	Remaining issues on random access for Rel-13 low complexity and enhanced coverage Ues	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154789	Bundling paging messages, CE capability and UE behaviour	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.6	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: User Plane aspects	Yes	not treated		R2-154790	HARQ mechanism for Rel-13 LC and CE Ues	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	No	withdrawn		R2-154791	Running 36.321 CR for Rel-13 low complexity UEs and UEs operating coverage enhancements	Ericsson	draftCR	36.321				B		Rel-13	LTE_MTCe2_L1-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	No	withdrawn		R2-154792	Running 36.304 CR for Rel-13 low complexity UEs and UEs operating coverage enhancements	Ericsson	draftCR	36.304				B		Rel-13	LTE_MTCe2_L1-Core				
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	approved		R2-154793	LS on Indoor Positioning impacts to 29.171 (to: CT4; cc: -; contact: Nextnav)	RAN2	LS out						LS to CT4 on Changes to TS 29.171 for new positioning methods	Rel-13	UTRA_LTE_iPos_enh-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154794	SIB1 scheduling for Rel-13 MTC	Samsung Telecommunications	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	not treated		R2-154795	LAA SCell Activation and Deactivation	Samsung Telecommunications	discussion							Rel-13	LTE_LAA-Core				
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	revised		R2-154796	Report of email discussion [91#31][LTE/D2D] Relay selection and reselection	Qualcomm	report							Rel-13	LTE_eD2D_Prox-Core		R2-154918		
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154797	Considerations on User Plane functions for NB-IOT	LG Electronics Inc.	discussion							Rel-13	NB_IOT-Core				new WI code added
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	noted		R2-154798	Open Issues of ProSe UE-to-Network relay	Qualcomm Incorporated, ZTE, InterDigital, Intel	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	noted		R2-154799	Priority handling for Sidelink Direct Communication	Qualcomm Incorporated, ZTE, Samsung	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154800	RAN2 aspects of V2X	Qualcomm Incorporated	discussion							Rel-13	FS_LTE_V2X				
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	not treated		R2-154801	Control Plane Aspects of NB-IOT	Qualcomm Incorporated	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154802	User plane aspects of NB-IOT	Qualcomm Incorporated	discussion							Rel-13	NB_IOT-Core				new WI code added
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-154803	Rx-Tx Time Difference Reporting	Huawei, HiSilicon	discussion							Rel-11	TEI11				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not pursued		R2-154804	Rx-Tx Time Difference Reporting	Huawei, HiSilicon	draftCR	36.331	11.12.0			F		Rel-11	TEI11				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154805	Rx-Tx Time Difference Reporting	Huawei, HiSilicon	draftCR	36.331	12.6.0			A		Rel-12	TEI11				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-154806	UE handling on Paging message in RRC connected mode	Huawei, HiSilicon	discussion							Rel-8	TEI8, LTE-L23				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not treated		R2-154807	Draft LS on Paging handling in RRC connected mode	Huawei	LS out							Rel-8	TEI8, LTE-L23				
07.01.3	LTE Rel-13: WI: Licensed-Assisted Access using LTE: Other	Yes	noted		R2-154808	RRC impact analysis for LAA cell	Huawei, HiSilicon	discussion							Rel-13	LTE_LAA-Core				
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	Yes	not treated		R2-154809	TCP Performance with shorter TTI lengths	QUALCOMM CDMA Technologies	discussion							Rel-13	FS_LTE_LATRED				
07.10.3	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: Handover latency enhancements	Yes	not treated		R2-154810	Handover Latency Improvements	QUALCOMM CDMA Technologies	discussion							Rel-13	FS_LTE_LATRED				
07.05.1.1	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE initiation/discovery	Yes	not treated		R2-154811	In-coverage discovery/selection of UE-to-Network relays	BlackBerry UK Limited	discussion							Rel-13	LTE_eD2D_Prox-Core				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	withdrawn		R2-154812	TDM DRX cycle for IDC	Intel Corporation	discussion							Rel-11	SPIA_IDC_LTE-Core				
07.10.3	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: Handover latency enhancements	Yes	noted		R2-154813	Analysis on reduction of handover interruption	Intel Corporation	discussion							Rel-13	FS_LTE_LATRED				
11.11	UTRA Rel-13: UMTS TEI13 enhancements	Yes	postponed	late	R2-154814	LTE CA capability inquiry	Qualcomm Inc	draftCR	25.331	12.7.0			B		Rel-13	TEI13				No info yet
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154815	Correction to SystemTimeInfoCDMA2000 IE	Nokia Networks	draftCR	36.331	11.13.0			F	in principle agreed in RAN2#91bis	Rel-11	LTE-L23, TEI11				wrong WI code used in CR cover: it should be "LTE-L23, TEI11" since LTE-L23 was a REL-8 WI code
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154816	Mapping between logical channel priority and LCG and SL BSR reporting	Nokia Networks	discussion							Rel-13	LTE_eD2D_Prox-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154817	Impact of PTW on power consumption in I-eDRX	Intel Corporation	discussion							Rel-13	LTE_extDRX-Core				
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	noted		R2-154818	System Information Modification for LC MTC UEs	INTERDIGITAL COMMUNICATIONS	other							Rel-13	LC_MTC_LTE				wrong Type used; it should be type discussion
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	not treated		R2-154819	SFN/Subframe time difference measurement and reporting	Qualcomm Incorporated	discussion							Rel-13	LTE_dualC_enh-Core				
07.17	LTE Rel-13: Other LTE Rel-13 WIs	Yes	noted	late	R2-154820	Discussion on the need of eNB awareness for EVS	Qualcomm Incorporated	discussion						Related to the LS from SA4 in R2-154019	Rel-13	QOSE2EMTSI				

UMTS
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MCLD
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NB-IoT
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ProSe
V2X
NB-IoT
NB-IoT
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UMTS
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eDRX

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	noted		R2-154821	Introduction of WLAN, BT, Sensor, and UE autonomous positioning	Qualcomm Incorporated	discussion							Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	No	withdrawn		R2-154822	Introduction of WLAN, BT, Sensor, and UE autonomous positioning	Qualcomm Incorporated	CR	36.305	12.2.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				CR will not be treated in this bis meeting
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	No	withdrawn		R2-154823	Introduction of WLAN, BT, Sensor, and UE autonomous positioning	Qualcomm Incorporated	CR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				CR will not be treated in this bis meeting
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	not treated		R2-154824	Introduction of WLAN, BT, Sensor, and UE autonomous positioning	Qualcomm Incorporated	draftCR	36.305	12.2.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				wrong WI code used in CR cover
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	not treated		R2-154825	Introduction of WLAN, BT, Sensor, and UE autonomous positioning	Qualcomm Incorporated	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				wrong WI code used in CR cover
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154826	Introduction of UE inter-frequency RSTD calibration accuracy reporting	Qualcomm Incorporated	discussion							Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.02.03.2	LTE Rel-13: WI: CA enhancements: UP aspects: PUCCH on SCell	Yes	noted		R2-154827	Remaining issues on SR on PUCCH SCell	Sharp	discussion							Rel-13	LTE_CA_enh_b5C-Core				moved from 7.2.2.2 to 7.2.3.2
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154828	Introduction of UE inter-frequency RSTD calibration accuracy reporting	Qualcomm Incorporated	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				wrong WI code used in CR cover
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154829	Introduction of OTDOA enhancements for the shared Cell-ID scenario	Qualcomm Incorporated	discussion							Rel-13	UTRA_LTE_iPos_enh-Core				new WI code added
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154830	Introduction of OTDOA enhancements for the shared Cell-ID scenario	Qualcomm Incorporated	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				wrong WI code used in CR cover
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	not treated		R2-154831	Introduction of LoggedMeasurementResults filtering due to IDC	Nokia Networks	draftCR	36.331	12.7.0			B		Rel-13	LTE_eMDT2-Core				WI code missed
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154832	On the relationship between Release-13 and Release-12 LTE-WLAN Interworking	MediaTek Inc.	discussion							Rel-13	LTE_WLAN_radio-Core				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154833	General L2/L3 impacts due to introduction of NB-IOT feature	Intel Corporation	discussion							Rel-13	NB_IOT-Core				new WI code added
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	noted		R2-154834	Discussion on NAICS subset capability	Qualcomm Incorporated, Samsung	discussion							Rel-13	LTE_NAICS-Core				
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	noted		R2-154835	Discussion on NAICS Configuration	Qualcomm Incorporated, Samsung	discussion							Rel-12	LTE_NAICS-Core				
07.05.4	LTE Rel-13: WI: ProSe enhancements: Group priorities for ProSe communication	Yes	not treated		R2-154836	Remaining issues on mapping from per packet priority to resource pools	SHARP	discussion							Rel-12	LTE_eD2D_Prox-Core				
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	revised		R2-154837	CR for RSTD quantization error reduction	ZTE Corporation	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core		R2-154840		wrong WI code used in CR cover
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154838	UE based flow control for LTE-WLAN aggregation	MediaTek Inc., China Telecom	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154839	Remaining Control Plane Issues for LWA and LWI	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_WLAN_radio-Core				
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated		R2-154840	CR for RSTD quantization error reduction	ZTE Corporation	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core	R2-154837			wrong WI code used in CR cover
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	noted		R2-154841	LWA and LWI Issues for SA groups	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_WLAN_radio-Core				
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	noted		R2-154842	Clarification on TDD-FDD CA and DC	Qualcomm Incorporated	discussion							Rel-12	LTE_SC_enh_dualC-Core				
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	agreed		R2-154843	Clarification on tdd-FDD-CA-PCellDuplex	Qualcomm Incorporated	draftCR	36.306	12.6.0			F	in principle agreed in RAN2#91bis	Rel-13	LTE_CA_TDD_FDD-Core, LTE_SC_enh_dualC-Core				
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154844	Considerations on RA Response for Rel-13 MTC	KT Corp.	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154845	Further considerations on RRM for LAA	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_LAA-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	noted		R2-154846	Hyper-SFN paging procedures for eDRX	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_extDRX-Core				
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154847	RSSI measurement timing configuration	NTT DOCOMO, INC.	discussion							Rel-13	LTE_LAA-Core				
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	Yes	not treated		R2-154848	Draft Running 36.300 CR to capture agreements on RAN enhancements for extended DRX in LTE	QUALCOMM CDMA Technologies	draftCR	36.300	13.1.0			B		Rel-13	LTE_extDRX-Core				wrong spec ver number used in CR cover; it should be 13.1.0
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	not treated		R2-154849	Considerations on Random Access for Rel13 eMTC	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.4	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Paging	Yes	not treated		R2-154850	Paging repetition coordination for eMTC	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	not treated		R2-154851	Connected mode mobility support for Rel.13 eMTC	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.09.2	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for connected mode	Yes	not treated		R2-154852	Extended DRX in connected mode	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_extDRX-Core				
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted		R2-154853	Paging principles for NB-IOT	QUALCOMM CDMA Technologies	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.1	LTE Rel-13: WI: Narrowband IOT: Control Plane: System Information	Yes	noted		R2-154854	System Information for NB-IOT	QUALCOMM CDMA Technologies	report							Rel-13	NB_IOT-Core				new WI code added
07.16.3.1	LTE Rel-13: WI: Narrowband IOT: User Plane: Random Access	Yes	noted		R2-154855	Random Access for NB-IOT	QUALCOMM CDMA Technologies	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	No	withdrawn		R2-154856	NB-IoT - UE considerations	QUALCOMM CDMA Technologies	discussion							Rel-13	NB_IOT-Core				new WI code added
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154857	Unified Redistribution Proposal	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MC_load-Core				

LTE UP
MDT
NB-IoT
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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.04.2	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: SIB	Yes	not treated		R2-154858	System Information validity time for eMTC	QUALCOMM CDMA Technologies	discussion							Rel-13	LTE_MTCe2_L1-Core				
07.06.3	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Interworking Enhancements	Yes	not treated		R2-154859	Traffic steering method for interworking enhancement	HiSilicon, Qualcomm, Intel, BlackBerry, Interdigital	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154860	WLAN mobility set handling	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core				
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	not treated		R2-154861	PDCP reordering for LTE-WLAN aggregation	Huawei, HiSilicon	discussion							Rel-13	LTE_WLAN_radio-Core				
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	not treated		R2-154862	Discussion on LWA solution based on IPsec tunnelling	Huawei,HiSilicon	discussion							Rel-13	LTE_WLAN_radio_legacy-Core				new WI code added
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	not treated		R2-154863	Enhanced QoS Verification in feMDT	Huawei, HiSilicon	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.13.2	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: Coverage Optimization	Yes	not treated		R2-154864	Enhanced Coverage Optimization in feMDT	Huawei, HiSilicon	discussion							Rel-13	LTE_eMDT2-Core				new WI code added
07.13.1	LTE Rel-13: WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN: QoS Verification	Yes	not treated		R2-154865	New MDT measurement introduced by feMDT	Huawei, HiSilicon	discussion	36.314	12.0.0					Rel-13	LTE_eMDT2-Core				new WI code added
07.16.3.2	LTE Rel-13: WI: Narrowband IOT: User Plane: Other	Yes	noted		R2-154866	L2 protocol analysis for NB-IoT	NTT DOCOMO, INC.	discussion							Rel-13	NB_IOT-Core				new WI code added
07.16.2.1	LTE Rel-13: WI: Narrowband IOT: Control Plane: System Information	Yes	noted		R2-154867	System information design for NB-IoT	NTT DOCOMO, INC.	discussion							Rel-13	NB_IOT-Core				new WI code added
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	noted	late	R2-154868	Summary of email discussion: [91#26][LTE/WiFi] Radio Link Monitoring for WLAN aggregation	Huawei	discussion							Rel-13	LTE_WLAN_radio-Core				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	Yes	noted		R2-154869	General assumptions to work on NB-IoT together with Rel-13 eMTC	NTT DOCOMO, INC.	discussion							Rel-13	NB_IOT-Core				new WI code added
07.04.3	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Random Access	Yes	noted	late	R2-154870	discussion report on [91#24][LTE/MTC] Timer handling for extended coverage	Ericsson	report						report of email discussion [91#24]	Rel-13	LTE_MTCe2_L1-Core				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	postponed	late	R2-154871	Proposed CR to 36.331 on introduction of ACDC in LTE	LG Electronics Inc.	draftCR	36.331	12.7.0			B		Rel-13	ACDC-RAN-Core				for replacing CR in R2-154566
06.01.02	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: UP	Yes	not pursued	late	R2-154872	Clarification on L field setting to zero	Samsung Electronics Co., Ltd	draftCR	36.321	12.7.0			F		Rel-12	TEI12				for replacing CR in R2-154346
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated	late	R2-154873	CR on using time-domain separation method to distinguish small cells with same PCI	Huawei, HiSilicon	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				for replacing CR in R2-154601
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated	late	R2-154874	CR on using virtual PCI to distinguish small cells with same PCI	Huawei, HiSilicon	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				for replacing CR in R2-154603
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated	late	R2-154875	CR for reduce RSTD quantization error	Huawei, HiSilicon	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				for replacing CR in R2-154605
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	not treated	late	R2-154876	CR for using CSI-RSRP measurements to distinguish small cells with same PCI	Huawei, HiSilicon	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core				for replacing CR in R2-154607
07.16.2.2	LTE Rel-13: WI: Narrowband IOT: Control Plane: Paging	Yes	noted	late	R2-154877	Paging in NB-IOT	LG Electronics Inc.	discussion							Rel-13	NB_IOT-Core				
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	not treated	late	R2-154878	RRC Connection Control in NB-IOT	LG Electronics Inc.	discussion							Rel-13	NB_IOT-Core				
07.03.2	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: SC-PTM Configuration and Operation	Yes	noted		R2-154879	UP issues of SC-PTM	ZTE Corporation	discussion							Rel-13	LTE_SC_PTM-Core	R2-154130			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	not treated		R2-154880	Considerations on User Preferences	CATT	discussion							Rel-13	LTE_WLAN_radio-Core	R2-154066			
11.01.5	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Autonomous state transitions	Yes	noted		R2-154881	Initial considerations for the autonomous state transition	Nokia Networks	discussion							Rel-13	UTRA_EDL_L23-Core	R2-154103			
07.07	LTE Rel-13: WI: Multicarrier Load Distribution in LTE	Yes	not treated		R2-154882	Distributing UEs to multiple carries	Huawei, HiSilicon	draftCR	36.331	12.7.0			B		Rel-13	LTE_MC_load-Core	R2-154622			
07.05.2	LTE Rel-13: WI: ProSe enhancements: ProSe discovery in partial- and outside network coverage	Yes	not treated		R2-154883	Discovery out of coverage	LG Electronics France	discussion							Rel-13	LTE_eD2D_Prox-Core	R2-154574			
11.04	UTRA Rel-13: WI: Study on Network-Assisted Interference Cancellation and Suppression for UMTS	Yes	noted		R2-154884	Considerations on solutions for enhanced offloading in NAICS	Nokia Networks	discussion							Rel-13	UTRA_NAICS-Core	R2-154277			
07.01.2	LTE Rel-13: WI: Licensed-Assisted Access using LTE: RRM Measurements	Yes	not treated		R2-154885	LAA Measurements and Carrier Selection Procedure	Sony	discussion							Rel-13	LTE_LAA-Core	R2-154582			
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	not treated		R2-154886	Uu Link quality of Remote UE	PANASONIC R&D Center Germany, Qualcomm Incorporated	discussion						related to email discussion [91#31]	Rel-13	LTE_eD2D_Prox-Core	R2-154243			
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154887	Latency analaysis of Uu based V2V	LG Electronics France	discussion							Rel-13	FS_LTE_V2X	R2-154567			
07.04.5	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Mobility Support	Yes	noted		R2-154888	Report of the email discussion [91#25][LTE/MTCe2]	MediaTek Inc.	discussion							Rel-13	LTE_MTCe2_L1-Core	R2-154784			
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	revised	late	R2-154889	Clarification on Pcell support	Vodafone	draftCR	36.306	12.6.0			F		Rel-12	LTE_SC_enh_dualC-Core		R2-154979		
13.1.1	Comebacks: LTE breakout sessions: Report from the Legacy LTE User Plane session	Yes	approved		R2-154890	Report of the LTE beakout session (legacy LTE UP)	LG Electronics (session chair)	Report												
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154891	Report of the LTE breakout session (ProSe, eDRX, V2X and LATRED)	Interdigital (Vice-Chairman)	Report												
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154892	Report of the LTE breakout session (MCLD, MDT and SC-PTM)	CMCC (Vice-Chairman)	Report												
13.1.4	Comebacks: LTE breakout sessions: Report from NB-IOT session	Yes	approved		R2-154893	Report of the LTE breakout session (NB-IoT)	Media Tek (session chair)	Report												
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-154894	Report of [91#20][LTE/VoLTE] Establishment cause for mobile-originating VoLTE calls	Nokia Networks	report						related to email discussion [91#20]	Rel-10	TEI10	R2-154249			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	noted		R2-154895	Report of [91#21][LTE/CAfe] Capability signalling enhancements	Nokia Networks	report						related to email discussion [91#21]	Rel-13	LTE_CA_enh_b5C-Core	R2-154250			
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	Yes	not treated		R2-154896	Initial considerations on V2V	Intel Corporation	discussion							Rel-13	FS_LTE_V2X	R2-154297			
11.09	UTRA Rel-13: WI: Downlink TPC enhancements for UMTS	Yes	noted	late	R2-154897	LS on RAN1 Downlink TPC Enhancements agreements (R1-154800; contact: Huawei)	RAN1	LS in						to: RAN2	Rel-13	UTRA_EDL_TPC-Core			R1-154800	
07.01.1	LTE Rel-13: WI: Licensed-Assisted Access using LTE	Yes	noted	late	R2-154898	LS on UE-reported RSSI measurements for LAA (R1-156259; contact: Samsung)	RAN1	LS in						to: RAN2	Rel-13	LTE_LAA-Core			R1-156259	
07.05	LTE Rel-13: WI: ProSe enhancements	No	email discussion		R2-154899	Running stage 2 CR on Introduction of eD2D	Qualcomm	draftCR	36.300	13.1.0			B	one week email discussion [91bis#02][LTE/eD2D planned	Rel-13	LTE_D2D_Prox-Core				#02

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07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	No	email discussion		R2-154900	LS to RAN1 on RAN2 agreements on MTC (to: RAN1; cc: -; contact: Ericsson)	RAN2	LS out						one week email discussion [91bis#05][LTE/MTC] planned	Rel-13	LTE_MTCe2_L1-Core			R2-154870		#05
07.03.1	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Organizational	No	email discussion		R2-154901	Introduction of SC-PTM in 36.300	Huawei, HiSilicon	draftCR	36.300	13.1.0			B	one week email discussion [91bis#39][LTE/SC-PTM] planned	Rel-13	LTE_SC_PTM-Core					#39
13.1.1	Comebacks: LTE breakout sessions: Report from the Legacy LTE User Plane session	Yes	endorsed		R2-154902	Introduction of enhanced CA in PDCP	LG Electronics Inc.	draftCR	36.323	12.4.0			B	endorsed as a running CR	Rel-13	LTE_CA_enh_b5C-Core	R2-154410				LTE UP
06.02.03.2	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: UP	Yes	agreed		R2-154903	Corrections for sidelink in TS 36.321	Huawei, HiSilicon	draftCR	36.321	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_D2D_Prox-Core	R2-154042				LTE UP
07.04.1	LTE Rel-13: WI: Further LTE Physical Layer Enhancements for MTC: Organizational	Yes	noted		R2-154904	RRC details for Rel-13 low complexity UEs and coverage enhancements	Ericsson	discussion							Rel-13	LTE_MTCe2_L1-Core	R2-154655				
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	endorsed		R2-154905	Running 36.300 CR to capture agreements on carrier aggregation enhancements	Nokia Networks	draftCR	36.300	13.1.0			B	revision of endorsed running CR in R2-153963; endorsed as a running CR	Rel-13	LTE_CA_enh_b5C-Core					
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	revised		R2-154906	Draft LS on UE based timing offset reporting for DC enhancement Response (to: RAN1, RAN4; cc: -; contact: NTT DOCOMO)	NTT DOCOMO	LS out						reply LS to R2-154009 = R4-154844	Rel-13	LTE_dualC_enh-Core		R2-154911			
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	revised		R2-154907	[DRAFT] LS on IPsec tunnelling mechanism for LTE-WiFi aggregation (to: RAN2, SA2; cc: -; contact: Alcatel-Lucent)	Alcatel-Lucent	LS out							Rel-13	LTE_WLAN_radio_legacy-Core		R2-154915			
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	No	withdrawn		R2-154908	Draft LS to SA3/SA2 on RAN2 agreement	Alcatel-Lucent	LS out							Rel-13	LTE_WLAN_radio_legacy-Core					
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	revised		R2-154909	[DRAFT] LS on System Aspects for LTE-WLAN Radio Level Integration and Interworking Enhancement (to: SA2; cc: -; contact: Qualcomm)	QUALCOMM CDMA Technologies	LS out							Rel-13	LTE_WLAN_radio-Core		R2-154914			
07.02.03.1	LTE Rel-13: WI: CA enhancements: UP aspects: B5C	Yes	postponed		R2-154910	Running MAC CR for Carrier Aggregation enhancements	Ericsson	draftCR	36.321	12.7.0				revision of endorsed running CR in R2-153964; email discussion planned	Rel-13	LTE_CA_enh_b5C-Core					
07.08.1	LTE Rel-13: WI: Dual Connectivity Enhancements: CP	Yes	approved		R2-154911	Reply LS on UE based timing offset reporting for DC enhancement Response (to: RAN1, RAN4; cc: -; contact: NTT DOCOMO)	RAN2	LS out						reply LS to R2-154009 = R4-154844	Rel-13	LTE_dualC_enh-Core	R2-154906				
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	revised		R2-154912	DRAFT LS on agreements for WLAN measurement reporting (to: RAN4; cc: -; contact: Ericsson)	Ericsson	LS out							Rel-13	LTE_WLAN_radio-Core		R2-154913			
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	revised		R2-154913	LS on agreements for WLAN measurement reporting (to: RAN4; cc: -; contact: Ericsson)	Ericsson	LS out							Rel-13	LTE_WLAN_radio-Core	R2-154912	R2-154928			
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	Yes	revised		R2-154914	[DRAFT] LS on System Aspects for LTE-WLAN Radio Level Integration and Interworking Enhancement (to: SA2; cc: -; contact: Qualcomm)	QUALCOMM CDMA Technologies	LS out							Rel-13	LTE_WLAN_radio-Core	R2-154909	R2-154935			
07.15	LTE Rel-13: WI: LTE-WLAN RAN Level Integration supporting legacy WLAN	Yes	approved		R2-154915	LS on IPsec tunnelling mechanism for LTE-WiFi aggregation (to: SA3, SA2; cc: -; contact: Alcatel-Lucent)	RAN2	LS out							Rel-13	LTE_WLAN_radio_legacy-Core	R2-154907				
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154916	Draft LS to SA3 on LCID and the protection of one-to-one traffic	Ericsson	LS out						from: RAN2 to: SA3	Rel-13	LTE_eD2D_Prox-Core		R2-154933			ProSe
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154917	Draft LS to SA2 on RAN2 agreements related to ProSe	LG	LS out						from: RAN2 to: SA2, CT1, RAN3?	Rel-13	LTE_eD2D_Prox-Core		R2-154998			ProSe
07.05.1.2	LTE Rel-13: WI: ProSe enhancements: UE-to-Network Relays: Relay UE selection/re-selection	Yes	noted		R2-154918	Report of email discussion [91#31][LTE/D2D] Relay selection and reselection	Qualcomm	report							Rel-13	LTE_eD2D_Prox-Core	R2-154796				ProSe
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154919	Draft LS on eDRX agreements	Ericsson	LS out						from: RAN2 to: SA2 and RAN3	Rel-13	LTE_extDRX-Core		R2-154991			eDRX
07.09.1	LTE Rel-13: WI: RAN enhancements for extended DRX in LTE: eDRX for idle mode	No	email discussion		R2-154920	Running stage 2 CR for eDRX	Qualcomm	draftCR	36.300	13.1.0			B	one week email discussion [91bis#03][LTE/eDRX] planned	Rel-13	LTE_extDRX-Core					#03 eDRX
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	agreed		R2-154921	Extension of Frequency Priorities	Nokia Networks	draftCR	36.331	12.7.0			B	in principle agreed in RAN2#91bis	Rel-13	LTE_MC_load-Core	R2-154703				MCLD
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154922	Draft reply LS on a new measurement quantity for Multicarrier Load Distribution (to: RAN4; cc: RAN1; contact: Ericsson)	Ericsson	LS out							Rel-13	LTE_MC_load-Core		R2-155004			
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	agreed		R2-154923	Extension of Frequency Priorities	Nokia Networks	draftCR	36.304	12.6.0			B	in principle agreed in RAN2#91bis	Rel-13	LTE_MC_load-Core	R2-154704				MCLD
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154924	LS on new MDT measurement introduced by feMDT (to: RAN3; cc: -; contact: Huawei)	Huawei	LS out							Rel-13	LTE_eMDT2-Core		R2-154932			MCLD
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	revised		R2-154925	[DRAFT] LS on SC-PTM Service Continuity	Huawei	LS out							Rel-13	LTE_SC_PTM-Core		R2-154926			MDT
07.03.3	LTE Rel-13: WI: Single-Cell point-to-multipoint transmission: Service Continuity	Yes	approved		R2-154926	LS on SC-PTM Service Continuity (to: RAN3; cc: -; contact: Huawei)	RAN2	LS out							Rel-13	LTE_SC_PTM-Core	R2-154925			LS was sent on 08.10.2015	SC-PTM, M
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	noted		R2-154927	A merged CRS and OSS solution for Idle mode load distribution	Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, Samsung, LG Electronics, Intel Corporation, Sony, ZTE, Mediatek, ITRI	discussion							Rel-13	LTE_MC_load-Core					SC-PTM, M
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	approved		R2-154928	LS on agreements for WLAN measurement reporting (to: RAN4; cc: -; contact: Ericsson)	RAN2	LS out							Rel-13	LTE_WLAN_radio-Core	R2-154913				MCLD
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	No	email discussion		R2-154929	Text proposal for protocol evaluation in TR 36.881	Ericsson	pCR	36.881	0.3.0				one week email discussion [91bis#04][LTE/LATRED] planned	Rel-13	FS_LTE_LATRED					#04

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07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	No	email discussion		R2-154930	TR 36.881 v0.3.1 on Study on Latency reduction techniques for LTE	Ericsson	drat TR	36.881	0.3.1				one week email discussion [91bis#04][LTE/LATRED] planned	Rel-13	FS_LTE_LATRED					#04
07.16.2.3	LTE Rel-13: WI: Narrowband IOT: Control Plane: Other	Yes	postponed		R2-154931	LS on Security aspects of NB-IOT (to: SA3; cc: SA2; contact: Deutsche Telekom AG)	Deutsche Telekom AG	LS out							Rel-13	NB_IOT-Core					NB-IoT
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154932	LS on new MDT measurement introduced by feMDT (to: RAN3; cc: -; contact: Huawei)	Huawei	LS out							Rel-13	LTE_eMDT2-Core	R2-154924	R2-154934			MDT
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154933	LS on LCID and the protection of one-to-one traffic (to: SA3; cc: -; contact: Ericsson)	RAN2	LS out							Rel-13	LTE_eD2D_Prox-Core	R2-154916				ProSe
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154934	LS on new MDT measurement introduced by feMDT (to: RAN3; cc: -; contact: Huawei)	RAN2	LS out							Rel-13	LTE_eMDT2-Core	R2-154932				MDT
07.06.2.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: CP Architecture and Functionality	No	approved		R2-154935	LS on System Aspects for LTE-WLAN Radio Level Integration and Interworking Enhancement (to: SA2; cc: -; contact: Qualcomm)	RAN2	LS out						will attache running CR after email discussion	Rel-13	LTE_WLAN_radio-Core	R2-154914				
11.10	UTRA Rel-13: WI: Dual Carrier HSUPA Enhancements for UTRAN CS	Yes	approved		R2-154936	LS on RAN2 agreements for dual carrier HSUPA enhancements for UTRAN CS (to: RAN1, RAN3, RAN4; cc: -; contact: Nokia Networks)	RAN2	LS out							Rel-13	DC_HSUPA_CS-Core	R2-154286			LS was sent on 06.10	
08	UTRA Release 10 and earlier releases	Yes	noted		R2-154937	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	draftCR	25.302	10.2.0			F		Rel-11	RANimp-DC_HSUPA, 4C_HSDPA, 8C_HSDPA			R2-154098		UMTS
09	UTRA Release 11	Yes	agreed		R2-154938	Clarification for configuring HARQ A/N repetition with Multiflow	Nokia Networks	draftCR	25.331	11.14.0			F	in principle agreed in RAN2#91bis	Rel-11	HSDPA_MFTX			R2-154099		UMTS
10.1	UTRA Rel-12: WI: Further EUL Enhancements	Yes	postponed		R2-154939	Correction on DTCH transmisison control due to access group mechanism	Huawei, HiSilicon	draftCR	25.331	12.7.0			F		Rel-12	EDCH_enh-Core	R2-154190				UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	revised		R2-154940	draft LS to RAN3 on DL enhacements	Huawei, HiSilicon	LS out						from: RAN2 to: RAN3	Rel-13	UTRA_EDL_L23-Core		R2-154955			UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	revised		R2-154941	LS on extended DRX in Idle mode in UMTS	RAN2	LS out						from: RAN2 to: SA2, CT1, RAN4 cc:RAN3	Rel-13	UTRA_SDATA_POWSAV-Core	R2-154480	R2-154943			UMTS
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	revised		R2-154942	LS on enabling return into extended DRX in Idle mode for UMTS	Ericsson	LS out						from: RAN2 to: RAN3	Rel-13	UTRA_SDATA_POWSAV-Core	R2-154486	R2-154944			UMTS
11.02.1	UTRA Rel-13: WI: Power saving enhancements for UMTS: Extended DRX mechanisms in Idle mode	Yes	approved		R2-154943	LS on extended DRX in Idle mode in UMTS (to: SA2, CT1, RAN4; cc: RAN3; contact: Ericsson)	RAN2	LS out						reply LS to R2-153032 = S2-152697	Rel-13	UTRA_SDATA_POWSAV-Core	R2-154941				UMTS
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	revised		R2-154944	LS on enabling return into extended DRX in Idle mode for UMTS	Ericsson	LS out						from: RAN2 to: RAN3	Rel-13	UTRA_SDATA_POWSAV-Core	R2-154942	R2-154945			UMTS
11.02.2	UTRA Rel-13: WI: Power saving enhancements for UMTS: Other	Yes	approved		R2-154945	LS on enabling return into extended DRX in Idle mode for UMTS (to: RAN3; cc: -; contact: Ericsson)	RAN2	LS out							Rel-13	UTRA_SDATA_POWSAV-Core	R2-154944				UMTS
08	UTRA Release 10 and earlier releases	Yes	agreed		R2-154946	Clarification of physical channel combination for DC-HSUPA and MC-HSDPA	Nokia Networks	draftCR	25.302	10.2.0			F	in principle agreed in RAN2#91bis	Rel-11	RANimp-DC_HSUPA, 4C_HSDPA, 8C_HSDPA			R2-154098		UMTS
10.5	UTRA Rel-12: WI: WLAN/3GPP Radio Interworking - UTRA aspects	Yes	revised		R2-154947	Corrections to WLAN/3GPP radio interworking	Intel Corporation	draftCR	25.304	12.6.0			F		Rel-12	UTRA_LTE_WLAN_interw-Core	R2-154299	R2-154948			UMTS
10.5	UTRA Rel-12: WI: WLAN/3GPP Radio Interworking - UTRA aspects	Yes	agreed		R2-154948	Corrections to WLAN/3GPP radio interworking	Intel Corporation	draftCR	25.304	12.6.0			F	in principle agreed in RAN2#91bis	Rel-12	UTRA_LTE_WLAN_interw-Core	R2-154947				UMTS
07.10.2	LTE Rel-13: SI: Study on Latency reduction techniques for LTE: TTI reduction	No	email discussion		R2-154949	LS to RAN1 on evaluation agreements and conclusions	RAN2	LS out						one week email discussion [91bis#04][LTE/LATRED] planned	Rel-13	FS_LTE_LATRED					#04
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154950	DRAFT LS on V2X message characteristics (to: RAN1, SA1, SA2, SA3; cc: -; contact: Ericsson)	Ericsson	LS out						LS answer to LSin R2-154008	Rel-13	FS_LTE_V2X	R2-154671	R2-155003			Latency
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154951	Draft LS on inter-frequency and inter-PLMN discovery	Qualcom	LS out							Rel-13	LTE_eD2D_Prox-Core		R2-154990			V2X
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154952	Draft LS on out-of-coverage discovery	LG	LS out						from: RAN2 to: SA2 and CT1	Rel-13	LTE_eD2D_Prox-Core		R2-154999			ProSe
07.05	LTE Rel-13: WI: ProSe enhancements	No	email discussion		R2-154953	Running CR 36.300 for ProSe	Qualcomm	CR	36.300	13.1.0			B		Rel-13	LTE_eD2D_Prox-Core					ProSe
10.5	UTRA Rel-12: WI: WLAN/3GPP Radio Interworking - UTRA aspects	Yes	agreed		R2-154954	Corrections to WLAN/3GPP radio interworking	Intel Corporation	draftCR	25.331	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	UTRA_LTE_WLAN_interw-Core	R2-154298				UMTS
11.01.6	UTRA Rel-13: WI: L2/L3 Downlink enhancements for UMTS: Improved synchronize RRC procedures	Yes	approved		R2-154955	LS to RAN3 on DL enhancements (to: RAN3; cc: -; contact: Huawei)	RAN2	LS out							Rel-13	UTRA_EDL_L23-Core	R2-154940				UMTS
03.2	LSin: LTE relevance	Yes	revised		R2-154956	draft reply LS on features with an FGI bit dependency from an earlier release (to: RAN5; cc: RAN4; contact: Ericsson)	Ericsson	LS out						reply LS to R2-154014 = R5-154052	Rel-10	TEI10		R2-155005	R2-154014		
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	noted		R2-154957	Discussion and Comparison of LWA UP Architecture Options	CATT, Fujitsu, ZTE, CATR, OPPO	discussion							Rel-13	LTE_WLAN_radio-Core	R2-154035				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	revised		R2-154958	Reply LS on ACDC mechanism (to: CT1; cc: SA1; contact: LGE)	LGE	LS out							Rel-13	ACDC-RAN-Core		R2-154996			
11.08	UTRA Rel-13: WI: Indoor Positioning enhancements for UTRA and LTE	Yes	postponed		R2-154959	RAT-Independent positioning enhancements	NextNav, Broadcom, AT&T and TeleeCommunication Systems, Inc.	draftCR	25.305	12.1.0			B		Rel-13	UTRA_LTE_iPos_enh-Core	R2-154733				UMTS
11.08	UTRA Rel-13: WI: Indoor Positioning enhancements for UTRA and LTE	Yes	postponed		R2-154960	RAT-Independent positioning enhancements	NextNav, Broadcom, AT&T and TeleeCommunication Systems, Inc.	draftCR	25.331	13.0.0			B		Rel-13	UTRA_LTE_iPos_enh-Core	R2-154734				UMTS
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	revised		R2-154961	RAT-Independent positioning enhancements	NextNav, Broadcom, AT&T and TeleeCommunication Systems, Inc.	draftCR	36.305	12.2.0			B		Rel-13	UTRA_LTE_iPos_enh-Core	R2-154735	R2-154981			

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AI #	Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	not treated		R2-154962	RAT-Independent positioning enhancements	NextNav, Broadcom, AT&T and TeleCommunication Systems, Inc.	draftCR	36.355	12.4.0			B		Rel-13	UTRA_LTE_iPos_enh-Core	R2-154736			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	postponed		R2-154963	Draft LS on introduction of new establishment cause for mobile-originating calls (to: CT1, RAN3; cc: SA2; contact: Nokia Networks)	Nokia Networks	LS out							Rel-12	TEI12				
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154964	draftCR to correct UE messages to be sent only after security activation	Deutsche Telekom AG; Vodafone	draftCR	36.331	10.18.0			F	in principle agreed in RAN2#91bis	Rel-10	TEI10	R2-154717			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154965	IDC Overview Correction	Nokia Networks, Ericsson, NTT DOCOMO Inc.	draftCR	36.300	11.13.0			F	in principle agreed in RAN2#91bis	Rel-11	SPIA_IDC_LTE-Core	R2-154146			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154966	Clarification on FDD/TDD difference for UL CA IDC indication	Ericsson	draftCR	36.331	11.13.0			F	in principle agreed in RAN2#91bis	Rel-11	SPIA_IDC_LTE-Core	R2-154777			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	approved		R2-154967	Reply LS on 2 UL inter-band CA protection of GNSS (to: RAN4; cc: -; contact: NTT DOCOMO)	RAN2	LS out						reply LS to R2-153048 = R4-154064	Rel-11	SPIA_IDC_LTE-Core	R2-154728			LS was sent on 06.10
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154968	MCCH acquisiation for 1.4MHz MBSFN	ZTE Corporation	draftCR	36.331	12.7.0			B	in principle agreed in RAN2#91bis	Rel-13	TEI13	R2-154179			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	not pursued		R2-154969	MaxLayerMIMO in HandoverPreparationInformation	Ericsson	draftCR	36.331	12.7.0			F		Rel-12	LTE-L23, TEI12	R2-154749			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154970	Clarification on support of extened wait time	HTC Corporation	draftCR	36.306	12.6.0			F	in principle agreed in RAN2#91bis	Rel-12	NIMTC-RAN_overload	R2-154526			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154971	Correction of need code definition terminology	Ericsson	draftCR	36.331	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	TEI12	R2-154627			
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	agreed		R2-154972	Correction on categories in supportedBandCombination	Ericsson	draftCR	36.306	12.6.0			F	in principle agreed in RAN2#91bis	Rel-12	TEI12	R2-154779			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-154973	Corrections on sidelink related description in TS 36.300	Huawei, HiSilicon	draftCR	36.300	12.7.0			F	in principle agreed in RAN2#91bis	Rel-13	LTE_D2D_Prox-Core	R2-154038			
06.02.03.1	LTE: Rel-12: WI: LTE Device to Device Proximity Services - Radio Aspects: CP & Common	Yes	agreed		R2-154974	Corrections to Sidelink in TS 36.302	Intel Corporation	draftCR	36.302	12.5.0			F	in principle agreed in RAN2#91bis	Rel-13	LTE_D2D_Prox-Core	R2-154664			
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	revised		R2-154975	Draft LS on NAICS subset capability (to: RAN4; cc: -; contact: Qualcomm)	Qualcomm	LS out							Rel-13	LTE_NAICS-Core		R2-154995		
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	agreed		R2-154976	highPriorityAccess for MMTEL voice, MMTEL video and SMS	MediaTek Inc., Intel	draftCR	36.331	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	SCM_LTE-Core	R2-154271			
07.14.2	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Dependent positioning	Yes	noted		R2-154977	Discussion on RAT-dependent enhancements	ZTE Corporation	discussion							Rel-13	UTRA_LTE_iPos_enh-Core	R2-154312			
06.02.09.1	LTE: Rel-12: Other Closed Rel-12 WIs - CP & common CP/UP	Yes	agreed		R2-154978	Correction to the support of Mobility State reporting	Intel Corporation	draftCR	36.331	12.7.0			F	in principle agreed in RAN2#91bis	Rel-12	HetNet_eMOB_LTE-Core	R2-154290			
06.02.01.1	LTE: Rel-12: WI: Dual Connectivity for LTE (SCE): Dual Connectivity - CP	Yes	agreed		R2-154979	Clarification on Pcell support	Vodafone	draftCR	36.306	12.6.0			F	in principle agreed in RAN2#91bis	Rel-12	LTE_SC_enh_dualC-Core	R2-154889			
07.18	LTE Rel-13: LTE TEI13 enhancements	Yes	postponed		R2-154980	White-list of cells for EUTRA measurement reporting	Ericsson	draftCR	36.331	12.7.0					Rel-13	TEI13	R2-154747			
07.14.1	LTE Rel-13: WI: Indoor Positioning Enhancements for UTRA and LTE: RAT-Independent positioning	Yes	endorsed		R2-154981	RAT-Independent positioning enhancements	NextNav, Broadcom, AT&T, TCS	draftCR	36.305	12.2.0			B	endorsed as a running CR	Rel-13	UTRA_LTE_iPos_enh-Core	R2-154961			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	endorsed		R2-154982	36.300 CR for capturing B5C and PUCCH on SCell	Nokia Networks, NTT DOCOMO, INC.	draftCR	36.300	13.1.0			B	endorsed as a running CR	Rel-13	LTE_CA_enh_b5C-Core	R2-154456			
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	revised		R2-154983	Draft LS to RAN4 on Capability signalling enhancements (to: RAN4; cc: -; contact: Nokia Networks)	Nokia Networks	LS out							Rel-13	LTE_CA_enh_b5C-Core		R2-155006		
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	postponed		R2-154984	Running 36.331 CR for capturing B5C and PUCCH on Scell	Nokia Networks	draftCR	36.331	12.7.0			B	email discussion planned	Rel-13	LTE_CA_enh_b5C-Core	R2-154457			
07.06.2.2	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: LTE+WLAN Aggregation: UP Architecture and Functionality	Yes	noted		R2-154985	Summary of Offline Discussion and Way Forward on Identifier for PDCP PDUs over WLAN	Qualcomm Incorporated, Intel Corporation, China Telecom, Vodafone, Cisco, Mediatek, ZTE, Samsung, Ericsson, Sony, Huawei, NEC, Interdigital	discussion							Rel-13	LTE_WLAN_radio-Core			R2-154752	
06.01.01	LTE: Rel-12 and earlier REL: LTE: REL-11 and earlier: CP & Common	Yes	noted		R2-154986	Way forward on multiple NS/P-Max	NTT DOCOMO, INC., Deutsche Telekom, Orange, TeliaSonera, Sprint, CMCC	discussion							Rel-10	LTE-L23, TEI10			R2-154535	
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	revised		R2-154987	Report on RAN2 email discussion: [91#27][LTE/WiFi] RRM Measurement Framework for WLAN	Intel Corporation	report							Rel-13	LTE_WLAN_radio-Core	R2-154395	R2-154989		
07.06.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Organizational	Yes	revised		R2-154988	Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement	Intel Corporation	draftCR	36.300	12.7.0			B	revision of endorsed running CR in R2-153972	Rel-13	LTE_WLAN_radio-Core		R2-154997		
07.06.4	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: RRM Measurements	Yes	noted		R2-154989	Report on RAN2 email discussion: [91#27][LTE/WiFi] RRM Measurement Framework for WLAN	Intel Corporation	report							Rel-13	LTE_WLAN_radio-Core	R2-154987			
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154990	Draft LS on inter-frequency and inter-PLMN discovery (to: RAN1, RAN3, RAN4; cc: -; contact: Qualcomm)	Qualcomm	LS out							Rel-13	LTE_eD2D_Prox-Core	R2-154951	R2-154994		
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154991	LS on eDRX for EUTRA (to: SA1, SA2, CT1, RAN3; cc: -; contact: Ericsson)	RAN2	LS out							Rel-13	LTE_exIDRX-Core	R2-154919			
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154992	DRAFT LS on warning systems for feMTC (to: SA1, CT1, RAN3; cc: -; contact: Ericsson)	Ericsson	LS out							Rel-13	LTE_MTCe2_L1-Core		R2-155001		
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	revised		R2-154993	LS on eDRX cycles (to: RAN4; cc: -; contact: Qualcomm)	Qualcomm	LS out							Rel-13	LTE_exIDRX-Core		R2-155000		

ProSe

eDRX

eDRX

eDRX

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AI #	Agenda item	Upl oad ed	status	Late	Tdoc	Title	Source	Type:	Spec	Version #	CR #	rev	cat	further information	Release	SI/WI	Is revision of	Revised to	related Tdoc	comment	
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154994	LS on inter-frequency and inter-PLMN discovery (to: RAN1, RAN3, RAN4; cc: -; contact: Qualcomm)	RAN2	LS out							Rel-13	LTE_eD2D_Prox-Core	R2-154990				ProSe
06.02.05	LTE: Rel-12: WI: Network-Assisted Interference Cancellation and Suppression	Yes	approved		R2-154995	LS on NAICS subset capability (to: RAN4; cc: -; contact: Qualcomm)	RAN2	LS out							Rel-13	LTE_NAICS-Core	R2-154975				
05.1	Joint UMTS/LTE: Rel-13: WI: RAN aspects of Application specific Congestion control for Data Communication (ACDC)	Yes	approved		R2-154996	Reply LS on ACDC mechanism (to: CT1; cc: SA1; contact: LGE)	RAN2	LS out						reply LS to R2-153041 = C1-153276	Rel-13	ACDC-RAN-Core	R2-154958				
07.06.1	LTE Rel-13: WI: LTE-WLAN Radio Level Integration: Organizational	No	email discussion		R2-154997	Running 36.300 CR for LTE-WLAN Radio Level Integration and Interworking Enhancement	Intel Corporation	draftCR	36.300	13.1.0			B	revision of endorsed running CR in R2-153972; one week email discussion [91bis#01][LTE/WiFi] planned	Rel-13	LTE_WLAN_radio-Core	R2-154988				#01
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154998	LS on ProSe UE-to-Network relay (to: SA2, CT1; cc: - ; cotnact: LGE)	RAN2	LS out							Rel-13	LTE_eD2D_Prox-Core	R2-154917				ProSe
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-154999	LS on ProSe Direct Discovery out of coverage (to: SA2, CT1; cc: -; contact: LGE)	RAN2	LS out							Rel-13	LTE_eD2D_Prox-Core	R2-154952				ProSe
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-155000	LS on eDRX cycles (to: RAN4; cc: -; contact: Qualcomm)	RAN2	LS out							Rel-13	LTE_extDRX-Core	R2-154993				eDRX
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-155001	LS on warning systems for feMTC (to: SA1, CT1, RAN3; cc: -; contact: Ericsson)	RAN2	LS out							Rel-13	LTE_MTCe2_L1-Core	R2-154992				eDRX
07.11	LTE Rel-13: SI: Feasibility Study on LTE-based V2X Services	No	email discussion		R2-155002	TP capturing RAN2 agreements on V2X	LGE	pCR	36.885					one week email discussion [91bis#06][LTE/V2X] planned	Rel-13	FS_LTE_V2X					#06
13.1.2	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-155003	LS on V2X message characteristics (to: RAN1, SA1, SA2, SA3; cc: -; contact: Ericsson)	RAN2	LS out						reply LS to R2-154008 = R1-155014	Rel-13	FS_LTE_V2X	R2-154950				V2X
13.1.3	Comebacks: LTE breakout sessions: Report from LTE Break-Out session	Yes	approved		R2-155004	Reply LS on a new measurement quantity for Multicarrier Load Distribution (to: RAN4; cc: RAN1; contact: Ericsson)	RAN2	LS out						reply LS to R2-154022 = R4-155130	Rel-13	LTE_MC_load-Core	R2-154922				MCLD
03.2	LSin: LTE relevance	Yes	approved		R2-155005	Response LS on features with an FGI bit dependency from an earlier release (to: RAN5; cc: RAN4; contact: Ericsson)	RAN2	LS out						reply LS to R2-154014 = R5-154052	Rel-10	TEI10	R2-154956				
07.02.02.1	LTE Rel-13: WI: CA enhancements: CP & common aspects: B5C	Yes	approved		R2-155006	LS on CA band combination indexing (to: RAN4; cc: -; contact: Nokia Networks)	RAN2	LS out							Rel-13	LTE_CA_enh_b5C-Core	R2-154983				
07.16.1	LTE Rel-13: WI: Narrowband IOT: General	No	email discussion		R2-155007	Running 36.300 CR on Introduction of NB-IoT	Huawei	draftCR	36.300	13.1.0			B	oone week email discussion [91bis#07][NB-IOT] planned	Rel-13	NB_IOT-Core					#07

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Appendix 27

www.3gpp.org / ftp / tsg_ran / WG1_RL1 / TSGR1_50 / Docs

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R1-073364.zip	2007/08/15 12:45	12,3 KB
R1-073365.zip	2007/08/15 13:11	110,7 KB
R1-073366.zip	2007/08/15 13:11	113,8 KB
R1-073368.zip	2007/08/15 13:11	21,9 KB
R1-073369.zip	2007/08/15 12:45	44,7 KB
R1-073370.zip	2007/08/15 12:45	131,2 KB
R1-073371.zip	2007/08/15 13:11	45,9 KB
R1-073372.zip	2007/08/15 13:11	75,9 KB
R1-073373.zip	2007/08/15 13:11	409,7 KB
R1-073374.zip	2007/08/15 13:11	53,8 KB
R1-073375.zip	2007/08/16 8:39	74,2 KB
R1-073376.zip	2007/08/15 13:11	131,7 KB
R1-073377.zip	2007/08/15 13:11	156,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073378.zip	2007/08/15 13:11	63,5 KB
R1-073379.zip	2007/08/15 12:45	31,8 KB
R1-073380.zip	2007/08/15 12:45	43,9 KB
R1-073381.zip	2007/08/15 12:45	32,5 KB
R1-073382.zip	2007/08/15 12:45	93,8 KB
R1-073383.zip	2007/08/15 12:45	21,1 KB
R1-073384.zip	2007/08/15 12:45	105,2 KB
R1-073385.zip	2007/08/15 12:45	39,5 KB
R1-073386.zip	2007/08/15 12:45	52,7 KB
R1-073387.zip	2007/08/15 12:45	21,8 KB
R1-073388.zip	2007/08/15 12:45	38,7 KB
R1-073389.zip	2007/08/15 13:11	65 KB
R1-073390.zip	2007/08/15 13:11	47,9 KB
R1-073391.zip	2007/08/15 13:11	58,3 KB
R1-073392.zip	2007/08/15 12:45	252,6 KB
R1-073393.zip	2007/08/20 5:14	10,7 KB
R1-073394.zip	2007/08/15 12:45	13,5 KB
R1-073395.zip	2007/08/15 12:45	43,8 KB
R1-073396.zip	2007/08/15 12:45	37,5 KB
R1-073397.zip	2007/08/15 12:45	113 KB
R1-073398.zip	2007/08/15 13:11	26,7 KB
R1-073399.zip	2007/08/15 13:11	20,3 KB
R1-073401.zip	2007/08/20 5:14	16,4 KB
R1-073402.zip	2007/08/15 12:45	35,6 KB
R1-073403.zip	2007/08/15 12:45	36,7 KB
R1-073404.zip	2007/08/20 5:14	20,6 KB
R1-073405.zip	2007/08/15 12:45	17,5 KB
R1-073406.zip	2007/08/15 13:11	42,7 KB
R1-073407.zip	2007/08/15 13:11	44,7 KB
R1-073408.zip	2007/08/15 12:45	17,4 KB
R1-073409.zip	2007/08/16 8:39	54,7 KB
R1-073410.zip	2007/08/15 12:46	498,4 KB
R1-073411.zip	2007/08/15 12:46	59,8 KB
R1-073412.zip	2007/08/15 9:36	104,1 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073413.zip	2007/08/15 9:36	133,4 KB
R1-073414.zip	2007/08/15 9:36	691,4 KB
R1-073416.zip	2007/08/16 8:39	246 KB
R1-073417.zip	2007/08/15 13:28	272,1 KB
R1-073418.zip	2007/08/15 13:28	497,5 KB
R1-073419.zip	2007/08/15 13:28	312,8 KB
R1-073420.zip	2007/08/15 13:28	129,3 KB
R1-073421.zip	2007/08/15 13:28	64,9 KB
R1-073422.zip	2007/08/15 13:29	1717 KB
R1-073423.zip	2007/08/15 13:29	39,9 KB
R1-073424.zip	2007/08/15 13:29	70,1 KB
R1-073425.zip	2007/08/15 13:29	49 KB
R1-073426.zip	2007/08/15 13:29	48 KB
R1-073427.zip	2007/08/15 13:29	49,6 KB
R1-073428.zip	2007/08/15 13:29	164,7 KB
R1-073429.zip	2007/08/15 13:29	72,8 KB
R1-073430.zip	2007/08/15 13:30	119,2 KB
R1-073431.zip	2007/08/15 13:30	81,6 KB
R1-073432.zip	2007/08/15 13:30	93,9 KB
R1-073433.zip	2007/08/15 13:30	51,3 KB
R1-073434.zip	2007/08/15 13:30	41,5 KB
R1-073435.zip	2007/08/15 13:30	1742 KB
R1-073436.zip	2007/08/15 13:30	560,4 KB
R1-073437.zip	2007/08/13 16:51	18,2 KB
R1-073438.zip	2007/08/30 12:25	40,2 KB
R1-073439.zip	2007/08/15 14:23	20 KB
R1-073440.zip	2007/08/15 13:43	114,2 KB
R1-073441.zip	2007/08/14 17:37	107,8 KB
R1-073442.zip	2007/08/14 17:37	43,9 KB
R1-073443.zip	2007/08/14 8:45	60,7 KB
R1-073444.zip	2007/08/14 8:45	67,8 KB
R1-073445.zip	2007/08/14 8:45	30,8 KB
R1-073446.zip	2007/08/14 8:45	46,2 KB
R1-073447.zip	2007/08/14 8:45	19,9 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073448.zip	2007/08/14 9:41	365,7 KB
R1-073449.zip	2007/08/14 8:45	23,7 KB
R1-073450.zip	2007/08/14 8:45	18,5 KB
R1-073451.zip	2007/08/14 9:41	31,5 KB
R1-073452.zip	2007/08/15 14:06	9,7 KB
R1-073453.zip	2007/08/15 13:51	21,5 KB
R1-073454.zip	2007/08/15 14:06	22,7 KB
R1-073455.zip	2007/08/15 14:06	24,5 KB
R1-073456.zip	2007/08/15 13:51	23,2 KB
R1-073457.zip	2007/08/15 13:51	30,5 KB
R1-073458.zip	2007/08/15 13:51	50,5 KB
R1-073459.zip	2007/08/15 13:52	47,1 KB
R1-073460.zip	2007/08/15 13:52	21,2 KB
R1-073461.zip	2007/08/15 13:52	15,5 KB
R1-073462.zip	2007/08/15 13:52	76,7 KB
R1-073463.zip	2007/08/15 13:52	31,7 KB
R1-073464.zip	2007/08/15 13:52	52 KB
R1-073465.zip	2007/08/15 13:52	22,9 KB
R1-073466.zip	2007/08/15 13:52	174,5 KB
R1-073467.zip	2007/08/15 13:52	103,7 KB
R1-073468.zip	2007/08/15 13:52	63,5 KB
R1-073469.zip	2007/08/15 14:06	625,1 KB
R1-073470.zip	2007/08/15 14:15	55,6 KB
R1-073471.zip	2007/08/15 13:30	141,6 KB
R1-073472.zip	2007/08/15 13:30	50,1 KB
R1-073473.zip	2007/08/15 11:59	19,9 KB
R1-073474.zip	2007/08/15 14:06	75,4 KB
R1-073475.zip	2007/08/17 8:12	17 KB
R1-073476.zip	2007/08/15 14:06	17,4 KB
R1-073477.zip	2007/08/15 14:06	17,5 KB
R1-073478.zip	2007/08/15 14:06	46,9 KB
R1-073479.zip	2007/08/15 14:06	54,3 KB
R1-073480.zip	2007/08/15 14:07	500,3 KB
R1-073481.zip	2007/08/15 14:07	1215,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073482.zip	2007/08/15 14:15	72,7 KB
R1-073483.zip	2007/08/16 8:00	319,4 KB
R1-073484.zip	2007/08/15 14:15	33,6 KB
R1-073485.zip	2007/08/15 14:07	537 KB
R1-073486.zip	2007/08/15 14:07	399,8 KB
R1-073487.zip	2007/08/15 14:07	37,9 KB
R1-073488.zip	2007/08/15 14:07	18,2 KB
R1-073489.zip	2007/08/15 14:07	68 KB
R1-073490.zip	2007/08/15 14:07	30 KB
R1-073491.zip	2007/08/15 14:15	14 KB
R1-073492.zip	2007/08/15 14:07	125,1 KB
R1-073493.zip	2007/08/15 14:16	962,7 KB
R1-073494.zip	2007/08/15 14:16	71,2 KB
R1-073495.zip	2007/08/15 14:16	114,5 KB
R1-073496.zip	2007/08/15 14:16	357,7 KB
R1-073497.zip	2007/08/15 14:16	26,3 KB
R1-073498.zip	2007/08/15 14:16	29,1 KB
R1-073499.zip	2007/08/15 14:16	68,2 KB
R1-073501.zip	2007/08/15 14:16	66,7 KB
R1-073502.zip	2007/08/15 14:16	112,9 KB
R1-073503.zip	2007/08/15 14:07	57,5 KB
R1-073504.zip	2007/08/16 8:00	35,4 KB
R1-073505.zip	2007/08/15 14:07	17,5 KB
R1-073506.zip	2007/08/15 14:07	126,5 KB
R1-073507.zip	2007/08/15 14:07	240,9 KB
R1-073508.zip	2007/08/30 12:25	27 KB
R1-073509.zip	2007/08/15 13:30	50,8 KB
R1-073510.zip	2007/08/15 13:30	82,6 KB
R1-073511.zip	2007/08/15 13:30	48,5 KB
R1-073512.zip	2007/08/15 13:30	20,9 KB
R1-073513.zip	2007/08/15 13:31	215,3 KB
R1-073514.zip	2007/08/15 13:31	56,4 KB
R1-073515.zip	2007/08/15 13:31	76,6 KB
R1-073516.zip	2007/08/15 13:31	85,8 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073517.zip	2007/08/15 9:36	17,5 KB
R1-073518.zip	2007/08/15 9:36	106,3 KB
R1-073519.zip	2007/08/15 9:36	42,4 KB
R1-073520.zip	2007/08/15 9:35	30,7 KB
R1-073521.zip	2007/08/15 9:35	26,5 KB
R1-073522.zip	2007/08/15 9:35	103,6 KB
R1-073523.zip	2007/08/14 9:41	173,8 KB
R1-073524.zip	2007/08/14 9:41	15,7 KB
R1-073525.zip	2007/08/14 9:41	21,5 KB
R1-073526.zip	2007/08/15 11:59	186,4 KB
R1-073527.zip	2007/08/15 11:59	9,6 KB
R1-073528.zip	2007/08/15 11:59	89,7 KB
R1-073529.zip	2007/08/15 11:59	221,2 KB
R1-073530.zip	2007/08/15 11:59	56,6 KB
R1-073531.zip	2007/08/15 11:59	88,9 KB
R1-073532.zip	2007/08/15 11:59	8,1 KB
R1-073533.zip	2007/08/15 11:59	269,3 KB
R1-073534.zip	2007/08/15 11:59	61,1 KB
R1-073535.zip	2007/08/15 13:43	78,1 KB
R1-073536.zip	2007/08/15 13:43	46,2 KB
R1-073537.zip	2007/08/15 13:43	75,8 KB
R1-073538.zip	2007/08/15 13:43	79,2 KB
R1-073539.zip	2007/08/15 13:43	50,6 KB
R1-073540.zip	2007/08/15 13:43	23,5 KB
R1-073541.zip	2007/08/15 14:08	67,3 KB
R1-073542.zip	2007/08/15 13:43	27,3 KB
R1-073544.zip	2007/08/15 13:43	76,1 KB
R1-073545.zip	2007/08/15 13:43	54,1 KB
R1-073546.zip	2007/08/15 13:43	65,9 KB
R1-073547.zip	2007/08/15 13:43	92,4 KB
R1-073548.zip	2007/08/15 13:43	45,7 KB
R1-073549.zip	2007/08/15 13:43	67,7 KB
R1-073550.zip	2007/08/15 13:43	53,2 KB
R1-073551.zip	2007/08/15 13:43	33,3 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073552.zip	2007/08/15 13:43	27,5 KB
R1-073553.zip	2007/08/15 13:52	23,8 KB
R1-073554.zip	2007/08/15 13:52	201,3 KB
R1-073555.zip	2007/08/15 13:52	36,9 KB
R1-073556.zip	2007/08/15 13:52	73 KB
R1-073557.zip	2007/08/15 13:52	293,9 KB
R1-073558.zip	2007/08/15 13:52	31,4 KB
R1-073559.zip	2007/08/15 13:52	47 KB
R1-073560.zip	2007/08/15 13:52	91,6 KB
R1-073561.zip	2007/08/15 13:52	171,6 KB
R1-073562.zip	2007/08/15 13:52	147,8 KB
R1-073563.zip	2007/08/15 13:52	77,8 KB
R1-073564.zip	2007/08/15 13:53	611,8 KB
R1-073565.zip	2007/08/15 13:53	125,9 KB
R1-073566.zip	2007/08/15 13:53	79,9 KB
R1-073567.zip	2007/08/15 13:53	133,7 KB
R1-073568.zip	2007/08/20 5:14	37,1 KB
R1-073569.zip	2007/08/20 5:14	23 KB
R1-073570.zip	2007/08/15 14:08	52,5 KB
R1-073571.zip	2007/08/15 14:08	58,4 KB
R1-073572.zip	2007/08/15 13:53	51,6 KB
R1-073573.zip	2007/08/15 14:08	74,7 KB
R1-073574.zip	2007/08/15 14:08	46,1 KB
R1-073575.zip	2007/08/15 14:08	89,3 KB
R1-073576.zip	2007/08/15 14:08	108,2 KB
R1-073577.zip	2007/08/15 14:08	125,5 KB
R1-073578.zip	2007/08/15 14:08	125,5 KB
R1-073579.zip	2007/08/15 14:08	369,3 KB
R1-073580.zip	2007/08/15 14:08	111,9 KB
R1-073581.zip	2007/08/15 14:08	74,6 KB
R1-073582.zip	2007/08/15 13:43	14,1 KB
R1-073583.zip	2007/08/15 13:43	229,3 KB
R1-073584.zip	2007/08/15 13:43	32 KB
R1-073585.zip	2007/08/15 13:43	35,2 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073586.zip	2007/08/15 13:43	114,7 KB
R1-073587.zip	2007/08/15 13:43	136,7 KB
R1-073588.zip	2007/08/15 13:44	139,7 KB
R1-073589.zip	2007/08/15 13:44	188,2 KB
R1-073590.zip	2007/08/15 13:44	55,6 KB
R1-073591.zip	2007/08/15 13:44	43,5 KB
R1-073592.zip	2007/08/15 13:44	99,5 KB
R1-073593.zip	2007/08/15 13:44	392,6 KB
R1-073595.zip	2007/08/15 13:44	195,5 KB
R1-073596.zip	2007/08/15 13:44	112,3 KB
R1-073597.zip	2007/08/15 11:59	55,7 KB
R1-073599.zip	2007/08/16 8:39	110,5 KB
R1-073600.zip	2007/08/14 17:37	75,6 KB
R1-073601.zip	2007/08/15 12:46	25,3 KB
R1-073602.zip	2007/08/15 12:46	498,5 KB
R1-073603.zip	2007/08/15 12:46	48,5 KB
R1-073604.zip	2007/08/15 12:46	30,1 KB
R1-073605.zip	2007/08/15 12:46	16 KB
R1-073606.zip	2007/08/15 11:59	26,9 KB
R1-073607.zip	2007/08/15 11:59	18,5 KB
R1-073608.zip	2007/08/15 11:59	538 KB
R1-073609.zip	2007/08/15 11:59	114,8 KB
R1-073610.zip	2007/08/15 11:59	13,8 KB
R1-073611.zip	2007/08/15 11:59	18,9 KB
R1-073612.zip	2007/08/15 11:59	58,7 KB
R1-073613.zip	2007/08/15 11:59	63,3 KB
R1-073614.zip	2007/08/15 11:59	21,5 KB
R1-073615.zip	2007/08/15 11:59	73 KB
R1-073616.zip	2007/08/15 11:59	82,8 KB
R1-073617.zip	2007/08/15 11:59	102 KB
R1-073618.zip	2007/08/15 11:58	79,3 KB
R1-073619.zip	2007/08/15 11:58	78,3 KB
R1-073620.zip	2007/08/15 11:58	13 KB
R1-073621.zip	2007/08/15 11:58	100,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073622.zip	2007/08/15 11:58	182,7 KB
R1-073623.zip	2007/08/15 11:58	41,1 KB
R1-073624.zip	2007/08/15 11:58	262,5 KB
R1-073626.zip	2007/08/15 11:58	357,2 KB
R1-073627.zip	2007/08/15 11:58	244,6 KB
R1-073628.zip	2007/08/15 11:58	151,4 KB
R1-073629.zip	2007/08/15 14:24	20,9 KB
R1-073630.zip	2007/08/15 11:58	13,5 KB
R1-073631.zip	2007/08/15 11:58	65,8 KB
R1-073632.zip	2007/08/15 11:58	73,2 KB
R1-073633.zip	2007/08/15 11:58	107,3 KB
R1-073634.zip	2007/08/15 14:16	90 KB
R1-073635.zip	2007/08/15 11:58	50,3 KB
R1-073636.zip	2007/08/15 11:58	109,1 KB
R1-073637.zip	2007/08/19 15:22	38,3 KB
R1-073638.zip	2007/08/15 13:44	64,3 KB
R1-073639.zip	2007/08/15 13:44	44,2 KB
R1-073640.zip	2007/08/15 13:44	17,8 KB
R1-073641.zip	2007/08/15 13:44	18,9 KB
R1-073642.zip	2007/08/15 13:53	26,7 KB
R1-073643.zip	2007/08/15 13:53	41,5 KB
R1-073644.zip	2007/08/15 13:53	45,2 KB
R1-073645.zip	2007/08/15 13:44	24,7 KB
R1-073646.zip	2007/08/15 13:44	40,6 KB
R1-073647.zip	2007/08/15 13:44	34,9 KB
R1-073648.zip	2007/08/15 13:44	33,4 KB
R1-073649.zip	2007/08/15 13:44	29 KB
R1-073650.zip	2007/08/15 13:44	15,7 KB
R1-073651.zip	2007/08/15 13:44	51,7 KB
R1-073652.zip	2007/08/15 13:44	35,8 KB
R1-073653.zip	2007/08/15 13:53	44,9 KB
R1-073654.zip	2007/08/15 13:53	34,3 KB
R1-073655.zip	2007/08/15 13:53	22,9 KB
R1-073656.zip	2007/08/15 13:53	30,1 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073657.zip	2007/08/15 13:53	28,8 KB
R1-073658.zip	2007/08/15 13:53	41,9 KB
R1-073659.zip	2007/08/15 13:53	47,5 KB
R1-073660.zip	2007/08/15 13:53	15,2 KB
R1-073661.zip	2007/08/15 13:53	86,6 KB
R1-073662.zip	2007/08/15 13:53	56,7 KB
R1-073663.zip	2007/08/15 13:44	20,2 KB
R1-073664.zip	2007/08/15 13:44	27,2 KB
R1-073665.zip	2007/08/15 13:44	22 KB
R1-073666.zip	2007/08/15 13:44	34,1 KB
R1-073667.zip	2007/08/15 13:44	21,9 KB
R1-073668.zip	2007/08/15 13:44	103 KB
R1-073669.zip	2007/08/15 13:53	67,5 KB
R1-073670.zip	2007/08/15 13:53	15,7 KB
R1-073671.zip	2007/08/15 13:53	42 KB
R1-073672.zip	2007/08/15 13:53	103,3 KB
R1-073673.zip	2007/08/15 13:45	137,2 KB
R1-073674.zip	2007/08/16 8:39	23,3 KB
R1-073675.zip	2007/08/15 13:53	18,2 KB
R1-073676.zip	2007/08/15 13:53	21 KB
R1-073677.zip	2007/08/30 12:25	19,7 KB
R1-073678.zip	2007/08/15 13:53	48,9 KB
R1-073679.zip	2007/08/15 13:45	42,2 KB
R1-073680.zip	2007/08/15 13:54	36,1 KB
R1-073681.zip	2007/08/15 13:54	20 KB
R1-073682.zip	2007/08/16 8:39	22,9 KB
R1-073683.zip	2007/08/15 11:58	61,4 KB
R1-073684.zip	2007/08/15 11:58	70,8 KB
R1-073685.zip	2007/08/15 11:58	33,3 KB
R1-073686.zip	2007/08/15 11:58	55,4 KB
R1-073687.zip	2007/08/15 11:58	92 KB
R1-073688.zip	2007/08/15 11:58	33 KB
R1-073689.zip	2007/08/15 11:57	33,6 KB
R1-073690.zip	2007/08/15 11:57	52,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
R1-073691.zip	2007/08/15 11:57	37 KB
R1-073692.zip	2007/08/15 11:57	129,3 KB
R1-073693.zip	2007/08/15 11:57	168,3 KB
R1-073697.zip	2007/08/15 11:57	154,2 KB
R1-073698.zip	2007/08/15 11:57	17,8 KB
R1-073699.zip	2007/08/15 11:57	17,6 KB
R1-073700.zip	2007/08/15 11:57	54,8 KB
R1-073701.zip	2007/08/15 11:57	36,5 KB
R1-073703.zip	2007/08/15 11:57	58,7 KB
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R1-073707.zip	2007/08/15 11:57	298,2 KB
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R1-073710.zip	2007/08/15 13:45	72,5 KB
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R1-073712.zip	2007/08/15 13:31	17,8 KB
R1-073713.zip	2007/08/14 17:37	17,6 KB
R1-073714.zip	2007/08/16 8:00	5,3 KB
R1-073715.zip	2007/08/16 8:00	66,8 KB
R1-073716.zip	2007/08/16 8:00	14,2 KB
R1-073717.zip	2007/08/16 19:11	28,5 KB
R1-073718.zip	2007/08/16 8:00	305,7 KB
R1-073719.zip	2007/08/16 8:00	90,5 KB
R1-073720.zip	2007/08/16 8:00	60,6 KB
R1-073721.zip	2007/08/16 8:00	53,9 KB
R1-073722.zip	2007/08/16 8:00	97,5 KB
R1-073723.zip	2007/08/16 8:00	24,3 KB
R1-073724.zip	2007/08/16 8:00	31 KB
R1-073725.zip	2007/08/19 15:23	2957,1 KB
R1-073726.zip	2007/08/15 12:01	36 KB
R1-073727.zip	2007/08/15 13:31	5 KB
R1-073728.zip	2007/08/15 13:31	6,5 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R1-073734.zip	2007/08/15 12:01	6,8 KB
R1-073735.zip	2007/08/15 12:00	23,9 KB
R1-073736.zip	2007/08/15 14:08	10,7 KB
R1-073737.zip	2007/08/15 14:08	44,4 KB
R1-073738.zip	2007/08/15 14:08	33,5 KB
R1-073739.zip	2007/08/15 14:09	205,2 KB
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R1-073745.zip	2007/08/15 14:09	22 KB
R1-073746.zip	2007/08/16 8:00	272,6 KB
R1-073747.zip	2007/08/16 8:00	58,1 KB
R1-073749.zip	2007/08/20 5:14	10,1 KB
R1-073750.zip	2007/08/20 5:14	12,5 KB
R1-073751.zip	2007/08/15 14:09	63,6 KB
R1-073752.zip	2007/08/15 14:24	12,7 KB
R1-073753.zip	2007/08/15 13:11	50,9 KB
R1-073754.zip	2007/08/15 12:46	66,7 KB
R1-073755.zip	2007/08/15 12:46	55,2 KB
R1-073756.zip	2007/08/15 12:46	52,5 KB
R1-073757.zip	2007/08/15 12:46	81,4 KB
R1-073758.zip	2007/08/15 13:31	47 KB
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R1-073760.zip	2007/08/15 13:11	198,7 KB
R1-073761.zip	2007/08/15 13:31	154,1 KB
R1-073762.zip	2007/08/15 13:11	99,4 KB
R1-073763.zip	2007/08/15 13:11	38,9 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R1-073767.zip	2007/08/15 12:46	116,5 KB
R1-073768.zip	2007/08/15 12:46	37 KB
R1-073769.zip	2007/08/15 12:46	18,7 KB
R1-073771.zip	2007/08/15 12:46	51,1 KB
R1-073772.zip	2007/08/15 12:46	41,6 KB
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R1-073774.zip	2007/08/14 8:45	111,8 KB
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R1-073778.zip	2007/08/15 14:16	52,9 KB
R1-073779.zip	2007/08/15 14:16	210,1 KB
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R1-073781.zip	2007/08/15 14:16	149,5 KB
R1-073782.zip	2007/08/15 14:16	52,7 KB
R1-073783.zip	2007/08/16 8:00	85 KB
R1-073784.zip	2007/08/16 8:00	72,7 KB
R1-073785.zip	2007/08/16 8:00	41,2 KB
R1-073786.zip	2007/08/15 12:47	17,5 KB
R1-073787.zip	2007/08/29 8:41	8,4 KB
R1-073788.zip	2007/08/17 12:24	159,8 KB
R1-073789.zip	2007/08/17 11:50	18 KB
R1-073790.zip	2007/08/17 11:50	33,7 KB
R1-073791.zip	2007/08/17 11:50	23,6 KB
R1-073792.zip	2007/08/17 11:50	25,5 KB
R1-073793.zip	2007/08/17 8:12	156,9 KB
R1-073794.zip	2007/08/15 13:31	25 KB
R1-073795.zip	2007/08/16 9:35	51,8 KB
R1-073796.zip	2007/08/17 8:12	141,7 KB
R1-073797.zip	2007/08/17 8:12	50,2 KB
R1-073798.zip	2007/08/17 8:27	690,9 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R1-073805.zip	2007/08/17 12:24	16,4 KB
R1-073806.zip	2007/08/19 15:23	82,3 KB
R1-073807.zip	2007/08/17 9:17	366,1 KB
R1-073808.zip	2007/08/20 5:14	24,5 KB
R1-073809.zip	2007/08/20 5:14	12,6 KB
R1-073810.zip	2007/08/20 5:14	28,5 KB
R1-073811.zip	2007/08/29 8:39	673,1 KB
R1-073812.zip	2007/08/29 8:39	43,7 KB
R1-073813.zip	2007/08/29 8:39	23,5 KB
R1-073814.zip	2007/08/29 8:39	17,2 KB
R1-073815.zip	2008/01/29 15:33	231,8 KB
R1-073817.zip	2007/08/29 8:39	9,2 KB
R1-073818.zip	2007/08/29 8:39	6 KB
R1-073819.zip	2007/08/29 8:39	36,3 KB
R1-073820.zip	2007/08/29 8:39	8,2 KB
R1-073821.zip	2007/08/29 8:39	625,3 KB
R1-073822.zip	2007/08/29 8:39	60,6 KB
R1-073823.zip	2007/08/29 8:39	2954,4 KB
R1-073824.zip	2007/08/29 8:38	56,6 KB
R1-073825.zip	2007/08/29 8:38	157,9 KB
R1-073826.zip	2007/08/29 8:38	66,6 KB
R1-073827.zip	2007/08/29 8:38	9,1 KB
R1-073828.zip	2007/08/29 8:38	17,1 KB
R1-073829.zip	2007/08/29 8:38	19,9 KB
R1-073830.zip	2007/08/29 8:37	18,7 KB
R1-073831.zip	2007/08/29 8:37	25,5 KB
R1-073832.zip	2007/08/29 8:37	23,8 KB
R1-073833.zip	2007/08/29 8:37	39,3 KB
R1-073834.zip	2007/08/29 8:37	292,8 KB

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R1-073840.zip	2007/08/29 8:37	44,1 KB
R1-073841.zip	2007/08/29 8:37	13,2 KB
R1-073842.zip	2007/08/29 8:37	8,2 KB
R1-073843.zip	2007/08/29 8:37	39,1 KB
R1-073844.zip	2007/08/29 8:37	7,8 KB
R1-073845.zip	2007/08/29 8:37	57,9 KB
R1-073846.zip	2007/08/29 8:37	115,9 KB
R1-073847.zip	2007/08/29 8:37	14,4 KB
R1-073848.zip	2007/08/29 8:37	8,3 KB
R1-073849.zip	2007/08/29 8:37	5,4 KB
R1-073850.zip	2007/08/29 8:37	19,9 KB
R1-073851.zip	2007/08/29 8:37	29,9 KB
R1-073852.zip	2007/08/30 12:25	11,6 KB
R1-073853.zip	2007/08/29 8:37	23,8 KB
R1-073854.zip	2007/08/29 8:37	23,7 KB
R1-073855.zip	2007/08/29 8:37	23,7 KB
R1-073856.zip	2007/08/29 8:37	23,7 KB
R1-073857.zip	2007/08/29 8:36	65,6 KB
R1-073858.zip	2007/08/29 8:36	7,9 KB
R1-073859.zip	2007/08/29 8:36	24,1 KB
R1-073860.zip	2007/08/29 8:36	21,5 KB
R1-073861.zip	2007/08/29 8:36	20 KB
R1-073862.zip	2007/08/29 8:36	22,8 KB
R1-073863.zip	2007/08/29 8:36	21,5 KB
R1-073864.zip	2007/08/29 8:36	22 KB
R1-073865.zip	2007/08/29 8:36	19,7 KB
R1-073866.zip	2007/08/29 8:36	21,7 KB
R1-073867.zip	2007/08/29 8:36	12,2 KB
R1-073868.zip	2007/08/30 12:25	12,7 KB

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sort by name/desc	sort by date/desc	sort by size/desc
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R1-073871.zip	2007/08/29 8:36	59,9 KB
R1-073872.zip	2007/08/29 8:36	2761,5 KB
R1-073873.zip	2007/08/29 8:35	1156,8 KB
R1-073874.zip	2007/08/29 8:35	55,9 KB
R1-073875.zip	2007/08/29 8:35	8,1 KB
R1-073876.zip	2007/08/29 8:35	21,4 KB
R1-073877.zip	2007/08/29 8:35	17,2 KB
R1-073878.zip	2007/08/29 8:35	52,6 KB
R1-073879.zip	2007/08/29 8:35	21,7 KB
R1-073880.zip	2007/08/29 8:35	78,8 KB
R1-073881.zip	2007/08/29 8:35	56 KB
R1-073882.zip	2007/08/29 8:35	9,3 KB
R1-073883.zip	2007/09/03 7:38	8,8 KB
R1-073884.zip	2007/08/31 7:33	6 KB
R1-073885.zip	2007/08/29 8:35	12,8 KB
R1-073886.zip	2007/08/30 12:25	4,5 KB
R1-073887.zip	2007/08/29 8:35	14 KB
R1-073888.zip	2007/08/31 13:59	8,8 KB
R1-073889.zip	2007/09/07 7:51	8,8 KB
R1-073890.zip	2007/09/05 13:14	33,1 KB
R1-073891.zip	2007/09/05 13:14	33,3 KB
Tdoclist_RAN1 #50(Aug_2007).xls	2007/08/29 8:34	155 KB
Tdoclist_RAN1 #50(Aug_2007).zip	2014/11/07 12:42	40,9 KB
TDoc_List_Meeting_RAN1#50.xlsm	2017/06/05 1:03	114,3 KB
TDoc_List_Meeting_RAN1#50.xlsx	2017/11/07 23:22	130,8 KB
TDoc_List_Meeting_RAN1#50.zip	2018/01/10 16:43	178,4 KB

636 items.

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Appendix 28

3GPP_TSG_RAN_WG1 Archives

August 2007, Week 3

3GPP_TSG_RAN_WG1@LIST.ETSI.ORG

Options: Use Monospaced Font
Show Text Part by Default
Show All Mail Headers

Message: [<< First] [< Prev] [Next >] [Last >>]
Topic: [<< First] [< Prev] [Next >] [Last >>]
Author: [<< First] [< Prev] [Next >] [Last >>]

Subject: [RAN1#49] SHARP contributions
From: katsuragawa <[log in to unmask]>
Reply To: katsuragawa <[log in to unmask]>
Date: Wed, 15 Aug 2007 13:44:20 +0900
Content-Type: multipart/mixed
Parts/Attachments: text/plain (604 bytes) , text/html (19 kB) , R1-073319.zip (176 kB) , R1-073320.zip (58 kB) , R1-073321.zip (45 kB) , R1-073322.zip (20 kB) , R1-073323.zip (118 kB)

Dear ALL,

Please find attached 5 documents from SHARP to Athens meeting.

Tdoc#	Agenda	Title
R1-073319	7.2.2	Summary Results on OZCL Sequences for UL RS for LTE
R1-073320	7.2.4	Adaptive Best-M Based Scheme for CQI Reporting in the LTE UL
R1-073321	7.2.4	Improved Flexibility/Performance CQI+ACK/NACK coding in the E-UTRA uplink
R1-073322	7.2.4	UL physical channel for CQI report
R1-	7.2.7	Proposed Scrambling sequences for S-SCH with embedded frame timing

ATOM RSS1 RSS2

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Appendix 29

3GPP_TSG_RAN_WG1 Archives
August 2007, Week 4

3GPP_TSG_RAN_WG1@LIST.ETSI.ORG

Options: Use Monospaced Font
Show Text Part by Default
Show All Mail Headers

Message: [<< First] [< Prev] [Next >] [Last >>]
Topic: [<< First] [< Prev] [Next >] [Last >>]
Author: [<< First] [< Prev] [Next >] [Last >>]

Subject: Draft minutes from RAN1#50
From: Patrick Merias <[log in to unmask]>
Reply To: Patrick Merias <[log in to unmask]>
Date: Wed, 29 Aug 2007 10:47:59 +0200
Content-Type: multipart/mixed
Parts/Attachments: text/plain (265 bytes) , text/html (1128 bytes) ,
Draft_ReportWG1#50_v010.zip (259 kB)

Dear all,

Please find enclosed minutes of Athens meeting for your review, including Tdoc list and Participants list (still some names to be added - should be done by end of the week)
Thanks for taking care of the action points in annex F still pending.

Br,
Patrick

ATOM RSS1 RSS2

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Appendix 30

3GPP TSG RAN WG1 Meeting #50b
Shanghai, China, 8 – 12 October, 2007

R1-07xxxx

Agenda item

Title:	**Draft Report of 3GPP TSG RAN WG1 #50 v0.1.0 (Athens, Greece, 20 – 24 August, 2007)**
Document for:	**Comment**
Source:	**MCC Support**
	Please send your comments before 30/09/2007

Fact Summary

Meeting:	**3GPP TSG RAN WG1 #50**
Dates:	**20th through 24th August, 2007**
Venue:	**Athenaeum Intercontinental Hotel, Athens, GREECE**
Host:	**European Friends of 3GPP**
Attendees:	**203 delegates**
Documents:	**xxx (including some withdrawn and post-meeting artefacts)**

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F-06921 Sophia Antipolis Cedex
Tel: +33 4 92 94 42 06

Patrick.merias@etsi.org

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Executive summary

3GPP TSG WG RAN1 #50 meeting took place in the Athenaeum Intercontinental hotel, Athens, GREECE.

The meeting started at 9:15 on Monday 20th August and finished at 17:00 on Friday 24th August 2007.

On the first day, 20th of August, the election of WG RAN1 Chairman and Vice Chairmen took place and the result of the election was as follows:

New Chairman: **Mr. Dirk Gerstenberger (Telefon AB LM Ericsson, ETSI)**

New Vice Chairmen: **Dr. Sadayuki Abeta (NTT DoCoMo Inc. ARIB)**

Dr. Juho Lee (Samsung Electronic Co., Ltd, TTA)

The week was scheduled as follows:

- Monday: Agenda items 1, 2, 3, 4, 5, 7.1 and 7.2.3 – Parallel session (from 5:00PM) for 6 (TS on FDD only) and continuing discussions on 7.2.3.
- Tuesday: Agenda items 7.2.1 and 7.2.4 – Parallel session (from 6:30PM) for 6 (TS on TDD only) and continuing discussions on 7.2.4
- Wednesday: Agenda items 7.2.2 and 7.3 – Parallel session (from 7:00PM) for 7.5 and continuing discussions on 7.3
- Thursday: Agenda items 7.2.5, 7.2.9, 7.2.6, 6 (reviewing early in the week decisions), 8. and 9. – Farewell dinner for the departing Chairmen and Vice-Chairmen at 8:30PM
- Friday: Agenda items revisiting 7.1, 5 and 6, 7.4.2 and 7.4.5.

Agenda items 7.2.7, 7.2.8, 7.4.1, 7.4.3, 7.4.4 and 7.4.6 have not been treated due to lack of time.

The list of action points that required RAN1 close follow-up is listed in Annex F (end of document).

The number of contribution documents for this meeting was xxx, and those documents were categorized as followed.

Agenda Item	Input Document	Discussed Document
Liaison statement handling		
Maintenance of Rel7		
Evolved UTRA and UTRAN		

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The following set of documents is missing. The corresponding contributions have not been handed over by companies.

R1-073271	UL power control details	Qualcomm Europe
R1-073367	eNode-B Measurements	Motorola
R1-073415	Performance of LTE DL multi-user MIMO	Freescale Semiconductor
R1-073500	Preamble Indication for Non-Synchronized RACH	LG Electronics
R1-073543	PUCCH channel coding: block coding vs convolutional coding	Samsung
R1-073625	Remaining issues on random access	Panasonic
R1-073694	Uplink Power Control Method for E-UTRA	NTT DoCoMo
R1-073695	Investigation on Effect of Overload Indicator for Uplink Inter-cell Power Control	NTT DoCoMo
R1-073696	Multiplexing Method of Control Signals in PDCCH	NTT DoCoMo

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1 Opening of the meeting

Mr. Dirk Gerstenberger (RAN1 Chairman) welcomed the participants to the 50th RAN WG1 meeting and opened the meeting at 09:15.

~~Mr. Andreas Bury from NXP Semiconductors welcomed the delegates on behalf of the European Friends of 3GPP.~~

1.1 Call for IPR

The Chairman drew attention to Members' obligations under the 3GPP Partner Organizations' IPR policies. Every Individual Member organization is obliged to declare to the Partner Organization or Organizations of which it is a member any IPR owned by the Individual Member or any other organization which is or is likely to become essential to the work of 3GPP.

The attention of the members of this Technical Specification Group is drawn to the fact **that 3GPP Individual Members have the obligation** under the IPR Policies of their respective Organizational Partners to **inform their respective** Organizational Partners **of Essential IPRs they become aware of**.

The members take note that they are hereby invited:

- to investigate in their company whether their company does own IPRs which are, or are likely to become Essential in respect of the work of the Technical Specification Group.
- to notify the Director-General, or the Chairman of their **respective** Organizational Partners, of all potential IPRs that their company may own, by means of the IPR Statement and the Licensing declaration forms (e.g. see the ETSI IPR forms http://webapp.etsi.org/Ipr/).

2 Approval of the agenda

R1-073777	Draft Agenda for RAN1#50 meeting	RAN1 Chairman	(R1-073240)

Dirk Gerstenberger (Chairman) proposed the agenda for the meeting.

Discussion (Question / Comment):
Decision: The agenda was approved.

3 Approval of the minutes from previous meeting

R1-073241	Draft report of RAN1#49b meeting	MCC Support

The document was presented by Patrick Mérias

Discussion (Question / Comment): Typo mistake to be solved. Mr Chairman commented on the added information w.r.t post RAN#36 voting issues → this was supposed to be reported at plenary meeting.
Decision: The document is noted and shall be revised in R1-073815 during the week.

R1-073815	Draft report of RAN1#49b meeting	MCC Support

Decision: The document is agreed.

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4 Election of 3GPP RAN WG1 Officials

The position of Chairman had a single candidate, Mr. Dirk Gerstenberger (Telefon AB LM Ericsson, ETSI) who was appointed to the position of WG RAN1 Chairman.

The first position of Vice Chairman had four candidates, Dr. Sadayuki Abeta (NTT DoCoMo, ARIB), Dr. Juho Lee (Samsung Electronics Co., Ltd, TTA), Mr. Tang Hai (CATT, CCSA) and Mr. Xiang Guang Che (Nokia Corporation, ETSI). The result of the first ballot for the first position was as follows:

Total Votes cast was 93

Dr. Sadayuki Abeta : 41 votes (44,086%)

Dr. Juho Lee: 24 votes (25,806%)

Mr Tang Hai: 16 votes (17,204%)

Mr Xiang Guang Che: 12 votes (12,903%)

Dr. Juho Lee, Mr. Tang Hai and Mr. Xiang Guang Che decided to withdraw from a second ballot round for the first position of Vice Chairman and Dr. Sadayuki Abeta (NTT DoCoMo, ARIB) was therefore appointed to the first position of WG RAN1 Vice Chairman.

The second position of Vice Chairman had three candidates, Dr. Juho Lee (Samsung Electronics Co., Ltd, TTA), Mr. Tang Hai (CATT, CCSA) and Mr. Xiang Guang Che (Nokia Corporation, ETSI). The result of the first ballot for the second position was as follows:

Total Votes cast was 95

Dr. Juho Lee: 64 votes (67,368%)

Mr Tang Hai: 17 votes (17,895%)

Mr Xiang Guang Che: 14 votes (14,737%)

Mr. Tang Hai and Mr. Xiang Guang Che decided to withdraw from a second ballot round for the second position of Vice Chairman and Dr. Juho Lee (Samsung Electronic Co., Ltd, TTA) was therefore appointed to the second position of WG RAN1 Vice Chairman.

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5 Liaison statement handling

R1-073242	Receiver performance and enhanced CELL_FACH state	RAN2, LGE

The document was presented by (…) from LGE.

Discussion (Question / Comment):
Decision: Document is noted and RAN1 decided to leave the answer to RAN4.

R1-073243	Reply LS on physical layer aspects of Enhanced CELL_FACH state in FDD from WG1	RAN2, Alcatel-Lucent

The document was presented by Eliza Wong from Alcatel-Lucent.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073244	LS on Introduction of Very low bit rate WB-AMR Combinations into 25.993	RAN2, NSN

The document was presented by Joern Krause from NSN.

Discussion (Question / Comment):
Decision: Document is noted. Comments from other companies will be checked during the week. Reply LS document shall be done in R1-073816 (action point is obsolete and document is withdrawn from Tdoc list – see hereafter)

Friday 24th

There is new LS from RAN2 in R1-073880 that supersedes the previous in R1-073244.

R1-073880	LS on Introduction of RAB Combination into 25.993	RAN2, NSN

The document was presented by Joern Krause from NSN.

Discussion (Question / Comment):
Decision: Document is noted. Extra time is provided for full check until 31/08 and Reply LS shall be in R1-073883 by the 5th of September.

R1-073245	LS on HS-SCCH less + MIMO	RAN2, Qualcomm

The document was presented by (…) from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073713	Draft reply to LS on HS-SCCH less + MIMO [R1-073245]	Philips, Ericsson, Nokia, Nokia Siemens Networks, NXP Semiconductors

The document was presented by Matthew Baker from Philips.

Discussion (Question / Comment):
Decision: Document is noted and proposal agreed in principle. Revised LS in R1-073817 shall be prepared to reflect the approval of related CRs.

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R1-073817	Reply LS on HS-SCCH less + MIMO	RAN1, Philips

The document was presented by Matthew Baker from Philips.

Discussion (Question / Comment):
Decision: Document is agreed.

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R1-073248	Update on Relevant RAN5 Agreed CRs to TS 34.108	RAN5, NTT DoCoMo

The document was presented by Sadayuki Abeta from NTT DoCoMo.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073246	Physical Layer Aspects of eMBMS Counting	RAN2, IPWireless

The document was presented by Nick Anderson from IPWireless.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073714	Draft reply to LS on Physical Layer Aspects of eMBMS Counting [R1-073246]	Philips, NXP Semiconductors

The document was presented by Matthew Baker from Philips.

Discussion (Question / Comment):
Decision: Document is noted. Draft reply further to offline discussion shall be done in R1-073818 before the end of the week.

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R1-073818	Draft reply to LS on Physical Layer Aspects of eMBMS Counting [R1-073246]	Philips, NXP Semiconductors

The document was presented by Matthew Baker from Philips.

Discussion (Question / Comment):
Decision: Document is agreed. Final reply in R1-073884

R1-073247	[DRAFT] LS on Complementary Time Domain Filter for Neighbour Cell Measurements	RAN4, Ericsson

The document was presented by Ylva Jading from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073287	Liaison Statement to RAN1 on LTE Transmission of SU-1 of System Information	RAN2, Ericsson

The document was presented by Erik Dahlman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

New incoming LS received during Athens' meeting

R1-073857	LS on the dynamic range of the UE transmission power	RAN4, Motorola

The document was presented by Robert Love from Motorola.

Discussion (Question / Comment):
Decision: Document is noted.

6 Maintenance of R99, Rel4, Rel5, Rel6, Rel-7

CR to TS25.201

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R1-073450	25201 CR035 "Minor modification related to EDCH in 1.28Mcps TDD"	ZTE, CATT, TD-TECH, Spreadtrum Communications	

The document was presented by (…) from (…).

Discussion (Question / Comment):
Decision: Document is noted. Revision is to be prepared in R1-073830.

R1-073830	25201 CR035r1 (Rel-7, F) "Minor modification related to EDCH in 1.28Mcps TDD"	ZTE, CATT, TD-TECH, Spreadtrum Communications

The document was presented by (…) from (…).

Discussion (Question / Comment):
Decision: Document is agreed.

CR to TS25.211

R1-073324	25211CR242 "PICH associated HS-SCCH for Enhanced CELL_FACH"	Nokia Siemens Networks, Nokia	

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is noted. Revision is to be prepared in R1-073825.

Thursday 23rd

R1-073825	25211CR242r1 (Rel-7, F) "PICH associated HS-SCCH for Enhanced CELL_FACH"	Nokia Siemens Networks, Nokia

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073325	25211CR243 "Clarification for CPC feature"	Nokia Siemens Networks, Nokia	

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073336	25.211CR245 Clarifications on the use of S-CCPCH pilot bits for MBSFN FDD feature	Ericsson	

The document was presented by (…) from Ericsson.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073342	25211CR246 "Clarification on MICH"	Alcatel-Lucent	

The document was presented by Eliza Wong from Alcatel-Lucent.

Discussion (Question / Comment): Mr Chairman suggested changing WI to MBMS L1 and category to A
Decision: Document is agreed in principle, according the changes to cover sheet. Rel-6 CR (Cat F) shall also be prepared in R1-073826

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R1-073826	25211CR247 (Rel-6, F) "Clarification on MICH"	Alcatel-Lucent

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The document was presented by Eliza Wong from Alcatel-Lucent and covered both releases 6 and 7.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073343	25.211 CR0232r3 (Rel-7, C) "Enhanced F-DPCH"	Qualcomm Europe	

The document was presented by (…) from Qualcomm.

Discussion (Question / Comment):
Decision: Document is agreed.

CR to TS25.212

R1-073326	16QAM modulation selection algorithm for HSUPA	Nokia Siemens Networks, Nokia	

The document was presented by Karri Ranta-aho from NSN and explains issues concerning the algorithm for modulation selection and outlines a solution proposal. Associated CR is in R1-073327.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073327	25212CR252 "16QAM modulation selection for HSUPA"	Nokia Siemens Networks, Nokia	

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073337	25.212CR253 Clarifications of MIMO	Ericsson	

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment): MCC is asked to change font color from red to black in section 4.6B.1 when implementing the CR.
Decision: Document is agreed.

R1-073339	25.212CR254 "Clarifications of CPC and MIMO"	Ericsson	

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073344	25.212 CR255 (Rel-7, F) "RM1 transparent for HS-SCCH-less operation"	Qualcomm Europe	

The document was presented by (…) from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted. Further check is required with RAN2 to make certain the problem is taken care of in RRC. LS to RAN2 shall be prepared in R1-073827.

R1-073827	LS on maximum transport block size for HS-SCCH-less operation	RAN1, Philips

The document was presented by Matthew Baker from Philips.

Discussion (Question / Comment):
Decision: Document is agreed.

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CR to TS25.213

R1-073346	25.213 CR090 (Rel-7, D) "Editorial changes in 25.213 for 16QAM specification"	Qualcomm Europe	

The document was presented by (…) from Qualcomm.

Discussion (Question / Comment):
Decision: Document is agreed.

CR to TS25.214

R1-073328	25214CR452 "CPC preamble and postamble clarification for CQI transmission"	Nokia Siemens Networks, Nokia	

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is noted and shall be revised in R1-073828.

Friday 24th

R1-073877	25214CR452r2 "CPC preamble and postamble clarification for CQI transmission"	Nokia Siemens Networks, Nokia

The document was presented by Karri Ranta-aho from NSN as R1-073828 has been further revised during the week.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073329	25214CR453 "Removal of Inactivity_Threshold_for_UE_Grant_Monitoring definition"	Nokia Siemens Networks, Nokia	

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073330	25214CR454 "Corrections to HS-DSCH procedures for CELL_FACH and MIMO"	Nokia Siemens Networks, Nokia	

The document was presented by Karri Ranta-aho from NSN.

Discussion (Question / Comment):
Decision: Document is noted and shall be revised in R1-073829.

Friday 24th

R1-073861	25214CR454r2 "Corrections to HS-DSCH procedures for CELL_FACH and MIMO"	Nokia Siemens Networks, Nokia

The document was presented by Karri Ranta-aho from NSN as R1-073829 has been further revised during the week to align with "Type3" naming.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073332	Rel-7 E-DPDCH gain factor calculation	Nokia, Nokia Siemens Networks	

The document was presented by (…) from NSN.

Discussion (Question / Comment):
Decision: Document is noted.

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R1-073333	25214CR456 "Correction to Rel-7 E-DPDCH gain factor calculation"	Nokia, Nokia Siemens Networks	

The document was presented by (…) from NSN.

Discussion (Question / Comment):
Decision: Document is noted and shall be revised in R1-073831.

Friday 24th

R1-073864	25214 CR456r2 (Rel-7,F) "Correction to Rel-7 E-DPDCH gain factor calculation"	Nokia, Nokia Siemens Networks, Philips

The document was presented by (…) from NSN as R1-073831 has been further revised during the week.

Discussion (Question / Comment):
Decision: Document is agreed in principle and final revision to make the correct change marks in R1-073866.

R1-073334	Update to 64QAM CQI tables	Nokia, Nokia Siemens Networks	

The document was presented by Arto Lethi from Nokia.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073335	25214CR457 "Clarification to applicability of CQI tables in Rel. 7"	Nokia, Nokia Siemens Networks	

The document was presented by Arto Lethi from Nokia.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073338	25.214CR458 "Clarifications of MIMO and 64QAM"	Ericsson	

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted and suggestion is made for offline discussion to merge, if possible, R1-073335 and R1-073338. Merged CR should be in R1-073832.

Thursday 23rd

R1-073832	25.214 CR458r1 (Rel-7, F) "Correction of 64QAM CQI tables"	Ericsson, Philips, Nokia, Nokia Siemens Networks

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073340	25.214CR459 Clarifications of CPC	Ericsson	

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073345	25.214 CR460 (Rel-7, F) "E-DPDCH scaling when UE is at max power"	Qualcomm Europe	

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted. Discuss off line during the week and revised CR shall be in R1-073862.

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R1-073862	25.214 CR460r1 (Rel-7, F) "E-DPDCH scaling when UE is at max power"	Qualcomm Europe

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is agreed in principle and final revision to make the correct change marks in R1-073865.

R1-073812	CQI tables for HSDPA MIMO	Ericsson	

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073838	25.214 CR462r1 (Rel-7, F) "Correction of MIMO CQI tables	Ericsson, Philips, Nokia, Nokia Siemens Networks

The document was presented by Johan Bergman from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted. Due to late revision, grant is given for email approval until 31st August.

CR to TS25.215

R1-073341	25215 CR176 "Adding GANSS related measurements in the FDD physical layer measurements"	Alcatel-Lucent, Orange	

The document was presented by Eliza Wong from Alcatel-Lucent.

Discussion (Question / Comment): Mr Chairman suggested changing WI to MBMS L1 and category to A
Decision: Document is noted and shall be revised in R1-073814.

Thursday 23rd

R1-073814	25215 CR176r1 "Adding GANSS related measurements in the FDD physical layer measurements"	Alcatel-Lucent, Orange

The document was presented by Eliza Wong from Alcatel-Lucent.

Discussion (Question / Comment):
Decision: Document is agreed.

CR to TS25.221

R1-073807	Introduce TD-SCDMA industry standard in CCSA to 3GPP	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	(R1-073448)

The document was presented by (…) from ZTE and gives an introduction of the main differences between TD-SCDMA industry standard in CCSA and 3GPP (1.28Mcps TDD specification). Main changes for 3GPP release 7 specifications are also introduced.

Discussion (Question / Comment): Mr Chairman suggested to discuss the topic in RAN and to create the WI definition. Technical comments are welcomed from other companies but due to late submission, the analyzing of the proposed CRs was not possible in Athens. Extra time should be granted for further investigation.
Decision: Document is noted.

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R1-073443	25221 CR144 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	

The document was presented by (…) from ZTE.

Discussion (Question / Comment): No comments
Decision: Document is noted. Extra time for further review is given and CR shall be reviewed on 23rd August.

Thursday 23rd

Decision: Document is technically endorsed. It's asked RAN to clarify the work item situation.

R1-073523	TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN	CATT	

The document was presented by (…) from CATT and proposes a modification of the mapping of TFCI code words on S-CCPCH frames using 16QAM. It also demonstrates why TFCI physical channel bits should be mapped on a modulus signal point constellation.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073524	25221 CR145 (Rel-7, F) "TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN"	CATT	

The document was presented by (…) from CATT.

Discussion (Question / Comment): No comments
Decision: Document is agreed.

CR to TS25.222

R1-073444	25222 CR136 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	

The document was presented by (…) from ZTE.

Discussion (Question / Comment): No comments
Decision: Document is noted. Extra time for further review is given and CR shall be reviewed on 23rd August.

Thursday 23rd

Decision: Document is technically endorsed. It's asked RAN to clarify the work item situation.

R1-073525	25222 CR137 (Rel-7, F) "TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN"	CATT	

The document was presented by (…) from CATT.

Discussion (Question / Comment): No comments
Decision: Document is agreed.

R1-073796	Improved E-HICH signature allocation for LCR-TDD	Spreadtrum Communications	(R1-073471)

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The document was presented by Ke Wang from CATT on behalf of Spreadtrum. Simulation results for the detection performance of E-HICH of LCR TDD and a modification on the allocation of E-HICH signature are proposed. Related CR to TS25222 is in R1-073797.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073797	25222 CR138r1 (Rel-7, C) "Improved E-HICH signature allocation method for LCR-TDD"	Spreadtrum Communications	(R1-073472)

The document was presented by Ke Wang from CATT on behalf of Spreadtrum.

Discussion (Question / Comment):
Decision: Document is agreed.

CR to TS25.223

R1-073445	25223 CR046 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	

The document was presented by (…) from ZTE.

Discussion (Question / Comment): Typo error in last sentence needs correction. HS-DSCH shall be deleted.
Decision: Document is noted. CR shall be revised in R1-073839.

Thursday 23rd

R1-073839	25223 CR046r1 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell

The document was presented by (…) from ZTE.

Discussion (Question / Comment):
Decision: Document is technically endorsed. It's asked RAN to clarify the work item situation.

CR to TS25.224

R1-073446	25224 CR163 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	

The document was presented by (…) from ZTE.

Discussion (Question / Comment): No comments
Decision: Document is noted. New CR shall be prepared to make the change in annex A1 (R1-073840)

Thursday 23rd

R1-073840	25224 CR163r1 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell

The document was presented by (…) from ZTE.

Discussion (Question / Comment):
Decision: Document is technically endorsed. It's asked RAN to clarify the work item situation.

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R1-073808	25224 CR164r1 “Improvement on the power control of E-PUCH in 1.28Mcps TDD”	ZTE	(R1-073449)

The document was presented by (…) from ZTE.

Discussion (Question / Comment):
Decision: Document is agreed.

R1-073853	25224 CR166 (Rel-7, A) "Correction to the calculating formula of SIR"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell
R1-073854	25224 CR167 (Rel-6, A) "Correction to the calculating formula of SIR"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell
R1-073855	25224 CR168 (Rel-5, A) "Correction to the calculating formula of SIR"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell
R1-073856	25224 CR169 (Rel-4, F) "Correction to the calculating formula of SIR"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell

The set of above documents were presented by (…) from ZTE.

Discussion (Question / Comment):
Decision: Documents are agreed.

CR to TS25.225

R1-073447	25225 CR088 “Introduction of multi-frequency operation for 1.28Mcps TDD”	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	

The document was presented by (…) from ZTE.

Discussion (Question / Comment): No comments
Decision: Document is noted. Extra time for further review is given and CR shall be reviewed on 23rd August.

Thursday 23rd

Decision: Document is technically endorsed. It’s asked RAN to clarify the work item situation.

R1-073600	Enhanced UE DRX for HSPA Rel-8	Nokia Siemens Networks, Nokia

The document was presented by Karri Ranta-aho from NSN and discusses about needed improvements into Release 8 concerning UE power savings. The following enhancements are proposed:

- Add another DRX cycle into CELL_DCH state in order to have more adaptivity according to data inactivity
- UL DPCCH DTX cycle could depend on allowed serving grants in CELL_DCH state
- Fixed DRX pattern into CELL_FACH state

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- Automatic CELL_FACH to CELL_PCH state transition

Discussion (Question / Comment):
Decision: Document is noted.

7 Evolved UTRA and UTRAN

R1-073439	UE categories	NTT DoCoMo

The document was presented by Sadayuki Abeta from NTT DoCoMo and investigates the UE categories focusing on the number of UE categories, throughput.

Discussion (Question / Comment):
Decision: Document is noted. Good to have it on the table as basis for further discussion and to continue the exchange on email reflector (Sadayuki Abeta - NTT DoCoMo as email moderator)

The next document has not been treated.

R1-073273	D-BCH capacity	Qualcomm Europe

7.1 Updated Physical Layer Specifications

R1-073725	TS 36.211 v1.2.2	Ericsson

The document was presented by Stefan Parkvall from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted and shall be revised in R1-073823.

Friday 24th

R1-073823	TS 36211 v1.2.3	Ericsson

The document was presented by Stefan Parkvall from Ericsson.

Discussion (Question / Comment): Correction required in section 6.8.2 (correct to n_pdcch-1 in the 2nd paragraph)
Decision: Document is noted and endorsed to version v1.3.0 in R1-073872.

R1-073249	TS 36.212 v1.3.1	Qualcomm Europe

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted. Further checking from companies is welcomed and comments should be provided to the editor. Document shall be revised in R1-073821.

Friday 24th

R1-073821	TS 36212 v1.3.2	Qualcomm Europe

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment): Still some typo needs to be corrected in 5.2.4.2.1 + section numbering to be rechecked. Change to D<=(RxC) instead of $K_{\Pi} \leq (\mathrm{R} \times \mathrm{C})$, and correct title in table 5.3.4.1 to CFI codeword mapping.

Decision: Document is noted and endorsed to version v1.4.0 in R1-073873.

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R1-073358	Update of 36.213 Physical Layer Procedure for E-UTRA	Motorola

The document was presented by Robert Love from Motorola.

Discussion (Question / Comment):
Decision: Document is noted and shall be revised in R1-073824.

Friday 24th

R1-073824	TS 36213 v1.2.2	Motorola

The document was presented by Robert Love from Motorola.

Discussion (Question / Comment):
Decision: Document is noted and endorsed to version v1.3.0 in R1-073874

R1-073637	TS 36.214 v1.1.1	Nokia

The document was presented by Joern Krause from NSN.

Discussion (Question / Comment):
Decision: Document is noted and the endorsed version v1.2.0 including corrected section numbering is in R1-073819.

In addition, it's agreed to prepare LS to RAN2 (R1-073820) to let them know on LTE states.

Friday 24th

R1-073820	Request to clarify LTE states for physical layer measurements	Nokia Siemens Networks, Nokia, Panasonic, Ericsson, Motorola

The document was presented by Joern Krause from NSN.

Discussion (Question / Comment):
Decision: Document is noted and agreed in R1-073875.

7.2 Finalization of TS 36.211

R1-073851	On Guard Interval of LTE TDD FS2	CATT, Ericsson, ZTE, Nokia, Nokia Siemens Networks, Samsung, Huawei	

The document was presented by Tang Hai from CATT and proposes to remove the Guard Interval of LTE TDD frame structure type 2 and distribute it evenly into the CP of the same subframe. Related text proposal is attached.

Discussion (Question / Comment):
Decision: Document is agreed.

The following set of documents has not been treated.

R1-073281	Frame configurations for TDD frame structure type 1	IPWireless	
R1-073638	DL UL allocation period of 20ms for EUTRA TDD Frame Structure Type 1	Nokia, Nokia Siemens Networks	(R1-072992)
R1-073639	DL UL allocation options for EUTRA TDD	Nokia, Nokia Siemens Networks	

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7.2.1 Downlink reference signals

R1-073568	Summary of Reflector Discussions on EUTRA DL RS	Samsung

The document was presented by Aris Papasakellariou from Samsung and summarizes the recent discussions on Downlink reference signals.

Discussion (Question / Comment):
Decision: Document is noted.

The issues that still require RAN1 agreement are:

Support of both hopping and shifting

Companies expressed their preferred choice as follows:

- Frequency Hopping only: Huawei
- Frequency Shifting only: Samsung, TI, Marvell, Freescale, Nortel, Motorola, Ericsson, Nokia, NEC, LGE, ZTE, Panasonic, Qualcomm
- Both FS + FH: Alcatel-Lucent, Huawei, Nokia, Ericsson, NTT Docomo, LGE

Conclusion: Agreement on Frequency Shifting only.

The following set of documents has not been treated.

R1-073794	Specification of cell-specific DL RS FH sequences	Huawei
R1-073509	Throughput evaluation with cell-specific frequency-hopped/shifted DL RS using realistic DL CQI estimation/adaptive adjustment	Huawei

Dedicated RS for beamforming

R1-073289	Discussion on the Dedicated Demodulation RS	Nortel	

The document was presented by (…) from Nortel and addresses some issues related to dedicated RS (required for the UE to demodulate data) due to the introduction of an adaptive Beamforming system.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073665	On the Need of Downlink Dedicated RS	Nokia, Nokia Siemens Networks	

The document was presented by (…) from Nokia and summarizes the discussion points related to dedicated beamforming for LTE laid out in RAN1 so far.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073760	Channel Estimation for Open Loop Beamforming	Motorola	

The document was presented by (…) from Motorola.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073526	Downlink Dedicated Reference Symbols Structure for TDD with Frame Structure Type 2	CATT	

The document was presented by Tang Hai from CATT.

Discussion (Question / Comment): Proposal for agreement to be discussed off-line

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Decision: Document is noted.

R1-073706	Investigation on Adaptive Beamforming Using Dedicated RS in E-UTRA Downlink	NTT DoCoMo	

The document was presented by (…) from NTT DoCoMo and presents the system-level simulations on the coverage of L1/L2 control signal in a multi-cell environment by limiting the number of scheduled UEs and the effect of increasing the user throughput at cell boundary employing 8-antenna adaptive beamforming.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073715	Phase reference for downlink beamforming	Philips, NXP Semiconductors

The document was presented by Matthew Baker from Philips and shows a text proposal for TS36.211, proposing patterns for UE-specific reference symbols with the same overhead as the common reference symbols.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073726	Dedicated reference signal for E-UTRA Frame Structure Type1	Ericsson	

The document was presented by (…) from Ericsson and provides some of the benefits of extending the agreed dedicated beamforming approach to frame structure type 1, including a comparison with the obvious approach of exploiting higher order sectorization.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073584	Dedicated Beam-forming supported in E-UTRA DL	ZTE

The document was presented by (…) from ZTE.

Discussion (Question / Comment):
Decision: Document is noted.

The following set of documents has not been treated.

R1-073580	Downlink reference signal structure for TDD frame structure type 2	Samsung	
R1-073305	Discussion on Beamforming	Nortel	

Detailed sequence design

R1-073250	OS for DL RS	Qualcomm Europe

The document was presented by Juan Montojo from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted and proposal is:

- For long CP, no orthogonal RS, 510 sequences
- 3 orthogonal codes, 170 sequences + "guidance not to use same sequence in neighbor cells" as an alternative

R1-073640	Timing Estimation with Orthogonal RS	Nokia, Nokia Siemens Networks

The document was presented by Asbjörn Grovlen from Nokia.

Discussion (Question / Comment):

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Decision: Document is noted and proposal is:

- No orthogonal RS

R1-073417	Orthogonal RS for Different MBSFN Zones in E-UTRA	Texas Instruments

The document was presented by Eko Onggosanusi from TI.

Discussion (Question / Comment):
Decision: Document is noted. Keep the Way Forward as it is and continue offline discussion. Topic shall be revisited by the end of the week.

R1-073252	DL RS periodicity	Qualcomm Europe

The document was presented by Juan Montojo from Qualcomm and outlines the UE processing involved in PBCH demodulation. Proposal is made to adopt a periodicity of 40ms for PRS in E-UTRA.

Discussion (Question / Comment):
Decision: Document is noted. Keep the current agreement of 10ms.

The following set of documents has not been treated.

R1-073288	RS Structure Supporting Spatial Multiplexing for MBSFN	Nortel
R1-073399	MIMO RS Structure for Unicast/MBMS-Mixed Scenarios	Motorola
R1-073557	Power Scaling and DL RS boosting in a Multi-antenna System	Samsung
R1-073573	Tradeoffs of Additional RS in the PDCCH Region	Samsung

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R1-073879	Way forward on Orthogonal Sequence for DL-RS	Qualcomm Europe, Ericsson, Nortel, Fujitsu, Mitsubishi Elec., NEC, NTT DoCoMo, Sharp, Toshiba Corp., Alcatel-Lucent, Motorola, Freescale

The document was presented by Juan Montojo from Qualcomm as a result of the offline discussions that occurred during the week.

Discussion (Question / Comment): NTT DoCoMo supports the proposed Way Forward.
Decision: Document is noted and the Way forward agreed but needs to be further discussed in particular for the MBSFN subframes.

- For short CP, retain OS for DL-RS
- For long CP, remove OS for DL-RS
    - 510 PRS sequences need to be defined in 36.211
        - Redefine the mapping to:

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- [PSC idx, SSC idx] has no changes, remain as current SCH Conclusions, i.e., cell-search is not affected
- PRS idx for DL RS (1 out of 510) are mapped from [PSC idx, SSC idx]

R1-073886	Way Forward on Downlink Beamforming	NTT DoCoMo, Vodafone, Orange, T-Mobile, China Mobile, AT&T, Philips, Ericsson, Qualcomm Europe, NEC, Alcatel-Lucent, Fujitsu, Mitsubishi, Sharp, Arraycomm, ITRI, ZTE

The document was presented by Sadayuki Abeta from NTT DoCoMo.

Discussion (Question / Comment):
Decision: Document is noted and seems a good starting point for further discussion on way forward for DL beamforming. As consensus could not be found, decision is postponed to at next meeting.

7.2.2 Uplink reference signals

R1-073569	Summary of Reflector Discussions on EUTRA UL RS	Samsung	

The document was presented by Aris Papasakellariou from Samsung and provides the summary of UL RS email reflector discussions prior to meeting in Athens.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusions from email discussion:

- To be decided: whether pattern of cyclic shift hopping per PUCCH symbol is cell specific or resource specific. The absolute cyclic shift also depends on the UE ID for CQI and the PDCCH for ACK/NAK
- The SRS sequence index is derived from the PUCCH (base) sequence index.
- Orthogonal cover hopping (per slot) is agreed to be supported for PUCCH ACK/NAK sub-frames

Generation of UL RS Sequences

R1-073626	Reference signal generation method for E-UTRA uplink	Panasonic	

The document was presented by Hidetoshi Suzuki from Panasonic and discusses the reference signal generation method for PUCCH and PUSCH from several criteria such as the number of available ZC sequences, Cubic Metric (CM), cross correlation between different sequence indexes and cross correlation between different cyclic shifts.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073319	Summary Results on OZCL Sequences for UL RS for LTE	SHARP	

The document was presented by Prem Sood from Sharp and presents updated results that verify the performance improvements for Optimized Zadoff-Chu-Like (OZCL) sequences, including bit error rate performance results for related UL data transport using OZCL UL RS DM sequences.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion

- Select extension of ZC sequences for 3 RB or more
- For 1 and 2 RB: use “computer generated” sequences

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- Number of sequences: at least 30

Properties of computer generated methods (to be continued offline)

- CM smaller or equal to QPSK
- Average cross-correlation similar to ZC sequences

PUCCH Hopping

R1-073643	Symbol based cyclic shift hopping	Nokia Siemens Networks, Nokia	

The document was presented by Jari Lindholm from NSN and some remaining open issues on PUCCH cyclic shift hopping.

Discussion (Question / Comment):
Decision: Document is noted.

PUSCH DM RS

R1-073253	Details on UL DM RS	Qualcomm Europe	

The document was presented by Miss Xiaoxia Zhang from Qualcomm and comments several aspect of uplink demodulation RS for PUSCH against the decisions made in RAN1#49.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073728	PUSCH RS	Ericsson	

The document was presented by Erik Dahlman from Ericsson and discusses the parameterization of uplink demodulation reference signals for PUSCH and the corresponding configuration of UEs with respect to these parameters.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusions:

- When cyclic shift is indicated in the UL grant, 3 bits in the UL grant (on PDCCH) indicate up to 8 cyclic shifts per sequence.
- Whether cyclic shift is always indicated on the PDCCH is FFS.
- PUSCH DM RS cyclic shift hopping per slot is always enabled.

Duration of SRS transmission

R1-073642	UL sounding Arrangement	Nokia Siemens Networks, Nokia	

The document was presented by Jari Lindholm from NSN and discusses the remaining open issues regarding the SRS transmission.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion:

- Explicit semi-static higher layer signalling of periodicity and duration of the SRS transmission.

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Repetition factor RPF

- RPF=1 only
  - Same sequences as DM RS, no higher layer signalling of transmission comb
- RPF=2 only
  - More flexibility in multiplexing SRS from users with different BW
- RPF=1 or 2
  - In line with current agreement (RPF=1 for SRS with same BW, RPF=2 for SRS with different BW)

Conclusion on SRS RPF and Signaling of SRS transmission comb:

- RPF=2 only
- The transmission comb is signaled to the UE.

The following set of document has not been treated.

R1-073254	SRS multiplexing structure	Qualcomm Europe	
R1-073315	Uplink Reference Signal Sequence Design	Toshiba	
R1-073356	UL Sounding RS Protocol Design for Antenna Selection	Mitsubishi Electric	
R1-073418	Interference between Sounding Reference Signal and Random Access Preamble	Texas Instruments	
R1-073419	Uplink Reference Signal Sequence Assignments in E-UTRA	Texas Instruments	
R1-073420	Uplink Reference Signals in Support of Requirements for High-Speed UEs	Texas Instruments	
R1-073453	Assignment of Base Sequence Group for UL DM RS	NEC Group	
R1-073474	UL sounding RS operation	LG Electronics	
R1-073475	UL RS binding method with larger base RB sequences	LG Electronics	
R1-073517	Uplink Sounding Reference Signal in E-UTRA	Huawei	
R1-073518	Sequence grouping rule for UL DM RS	Huawei	
R1-073570	Sounding RS Multiplexing in E-UTRA UL – Interaction with PUCCH	Samsung	
R1-073627	Further consideration on uplink RS hopping and grouping	Panasonic	
R1-073628	Frequency dependent PUSCH DM-RS generation method with considering eNB-specific allocation	Panasonic	
R1-073629	Sounding RS multiplexing with RACH and PUCCH for E-UTRA uplink	Panasonic	
R1-073641	UL sounding reference signal for EUTRA TDD	Nokia, Nokia Siemens Networks	
R1-073644	Cyclic Shift Hopping and DM RS Signaling	Nokia Siemens Networks, Nokia	(R1-072991)
R1-073691	Sounding RS Structure in E-UTRA Uplink	NTT DoCoMo	
R1-073692	Assignment Scheme for Sounding Reference Signals in E-UTRA Uplink	NTT DoCoMo	
R1-073693	Necessity of Multiple Bandwidths for Sounding Reference Signals	NTT DoCoMo	
R1-073727	PUCCH RS	Ericsson	

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R1-073729	Sounding RS	Ericsson	
R1-073754	UL RS Generation for E-UTRA	Motorola	
R1-073755	E-UTRA UL RS planning and hopping considerations	Motorola	
R1-073756	Benefit of Non-Persistent UL Sounding for Frequency-Hopping PUSCH	Motorola	
R1-073757	UL Sounding RS for E-UTRA	Motorola	
R1-073774	Processing Gain and Uplink Channel Sounding	Freescale Semiconductor	
R1-073775	Uplink Channel Sounding Results' Discussion	Freescale Semiconductor	

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R1-073878	Outcome of offline discussions on UL RS	Samsung, Ericsson, Panasonic, LGE, Freescale, Texas Instruments, Sharp, Qualcomm, Nokia, NSN, Motorola, Nortel, NTT DoCoMo

The document was presented by Aris Papasakellariou from Samsung as a result of the offline discussion that occurred during the week.

Discussion (Question / Comment):
Decision: Document is noted. Mr Chairman encourages for proposals for CG generated UL DM RS to be submitted on the reflector until 7/9.

7.2.3 Downlink Control Signaling

R1-073750	E-mail discussion summary on downlink control signaling	Ericsson	

The document was presented by Stefan Parkvall from Ericsson and provides a summary of the discussions over email since last WG meeting w.r.t:

- Signaling of uplink resource allocations
- Signaling of downlink resource allocations
- PDCCH-to-RE mapping
- PDCCH contents
- PHICH duration in MBSFN subframes

Discussion (Question / Comment):
Decision: Document is noted.

R1-073585	UL resource allocation based on DFT precoder complexity reduction	ZTE	

The document was presented by (…) from ZTE and presents an example method for encoding and decoding the suggested scheme for UL resource allocation control signaling.

Discussion (Question / Comment):
Decision: Document is noted.

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R1-073372	Downlink Resource Allocation Mapping for E-UTRA	Motorola	

The document was presented by (…) from Motorola and describes RB bitmap scheme for downlink Resource Allocation mapping for supporting small, medium, large, FS, VoIP and distributed allocations.

Discussion (Question / Comment):

Decision: Document is noted.

From the above contributions, following assumptions are made

- Signaling of UL resource allocation: Proposal from section 2 is agreed.
- Signaling of DL resource allocation: Starting point for discussion:
  - RB group-wise bitmap with static consecutive RB group size configuration
    - possibility to address down to a single RB granularity by indication of resources within a group selected from disjoint groups
    - Number of bits needed: ??

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R1-073835	Outcome from offline discussions on Downlink Control Signaling	Ericsson, Qualcomm, Nokia, Nokia Siemens Networks, Panasonic, Motorola, NEC, Alcatel-Lucent, Samsung, LGE, Nortel, Huawei, TI, Mitsubishi, NTT DoCoMo, KDDI, ETRI

The document was presented by Stefan Parkvall from Ericsson as a result of the offline discussion that occurred during the week.

Discussion (Question / Comment): SF=4 for 1 and 2 Tx antenna case
Decision: Document is agreed.

R1-073870	Notes from offline discussions on PDCCH	Discussion moderator (Ericsson)

The document was presented by Stefan Parkvall from Ericsson as a result of the offline discussion that occurred during the week.

Discussion (Question / Comment):
Decision: Document is noted and the content marked in green is agreed as working assumption. In addition, "0 or 1" is also marked in green. Decisions on power control from this meeting are to be applied in addition to this document.

The following set of document has not been treated.

R1-073255	PDCCH structure	Qualcomm Europe	
R1-073256	Subband based allocation for PDSCH	Qualcomm Europe	
R1-073257	PDCCH format for transmission of TPC commands	Qualcomm Europe	
R1-073258	PHICH structure and multiplexing	Qualcomm Europe	
R1-073278	On the size of the CCE	Qualcomm Europe	
R1-073279	Dimensioning of TDD PHICH	IPWireless	
R1-073280	Dimensioning of TDD DL control signalling	IPWireless	

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R1-073290	The Resource Element Mapping of PDCCH, PCFICH and PHICH	Nortel	
R1-073369	Downlink Acknowledgement Mapping to RE's	Motorola	
R1-073370	Support of Precoding for E-UTRA DL L1/L2 Control Channel	Motorola	
R1-073371	E-UTRA Coverage	Motorola	
R1-073373	Search Space definition for L1/L2 Control Channels	Motorola	
R1-073374	PDCCH Channel Estimation System impact (1 vs 2 DRS) on System Performance	Motorola	
R1-073375	E-UTRA Downlink L1/L2 Control Channel Configurations	Motorola	
R1-073376	E-UTRA Downlink L1/L2 Control Channel Design - PICH/AICH/DBCH	Motorola	
R1-073377	Efficient Structure for Aggregating 12[3]48 Downlink Control Channel Elements	Motorola	
R1-073378	PMI Downlink Signaling & PDCCH format	Motorola	
R1-073416	Resource Allocation and Indication for LTE	Sunplus mMobile Inc.	
R1-073421	Choice of CRC Length To Reduce False PDCCH Detection	Texas Instruments	
R1-073441	UE and CCE specific scrambling codes for low complexity blind detection of downlink control signaling	Mitsubishi Electric	
R1-073451	Consideration on resource indication in LTE TDD	ZTE	
R1-073452	Control channel format for DBCH, PCH and RACH response	NEC, Nokia, Nokia Siemens Networks, Motorola	
R1-073454	Chicken and Egg issue for DL L1/L2 control	NEC Group	
R1-073455	Low overhead PDCCH format for BCCH, PCH, RACH response transmission on DL-SCH	NEC Group	
R1-073456	DL Control Channel Structure: CCE Aggregation and Blind Detections	NEC Group	
R1-073457	Uplink Resource Allocation for E-UTRA	NEC Group	
R1-073459	Downlink ACK/NACK signalling for E-UTRA	NEC Group	
R1-073460	DL Multiplexing for Persistent and Dynamic scheduling	NEC Group	
R1-073476	PHICH duration and signaling	LG Electronics	
R1-073477	DL PDCCH/PCFICH/RS transmission in MBSFN subframe	LG Electronics	
R1-073478	RB-group based DL LVRB allocation	LG Electronics	
R1-073479	Mapping Relations between UL VRB and DL ACK/NACK	LG Electronics	
R1-073480	Downlink PHICH structure	LG Electronics	
R1-073481	Scheduling restriction according to UL/DL subframe ratio in TDD	LG Electronics	
R1-073482	Considerations on PDCCH design for SU-MIMO	LG Electronics	
R1-073483	Interleaver design for CCE-to-RE mapping	LG Electronics	
R1-073484	On the consideration of DL L1/L2 control channel design for MIMO	LG Electronics	

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R1-073510	CCE to RE interleaver design criteria	Huawei	
R1-073511	DL control signaling to support MIMO	Huawei	
R1-073519	MBSFN impact on paging transmission	Huawei	
R1-073520	Subframe index in UL schedule grant for TDD FS Type 2	Huawei	
R1-073527	CCFI for LTE TDD	CATT	
R1-073528	Timing relationship between the DL control signaling and associated sub-frames for TDD	CATT	
R1-073535	Comparison of Downlink Resource Allocation Indication Schemes	Samsung	
R1-073536	Configuration of PDCCH Monitoring Set	Samsung	
R1-073538	DL ACK/NACK transmission for 1 transmit antenna	Samsung	
R1-073547	DL CCFI to RE mapping	Samsung	
R1-073556	Downlink Link Adaptation and Related Control Signaling	Samsung	
R1-073559	Downlink signaling for support of single-user MIMO	Samsung	
R1-073560	Downlink hybrid ARQ signaling	Samsung	
R1-073561	LTE downlink ACK channel mapping to CCE	Samsung	
R1-073565	Downlink ACK/NACK Transmit Diversity	Samsung	
R1-073575	UL Grant Size in E-UTRA	Samsung	
R1-073586	DL resource allocation and related signalling way	ZTE	
R1-073587	ACK/NACK transmission in E-UTRA downlink	ZTE	
R1-073597	On UL scheduling grant	Fujitsu	
R1-073603	Signaling Resource Allocations in DL Control Channel	Alcatel-Lucent	
R1-073607	PDCCH signaling for retransmission of downlink persistent scheduling	Panasonic	
R1-073608	CCE aggregation size and transport format signaling	Panasonic	
R1-073609	Semi-static, dynamic and hybrid CCE aggregation	Panasonic	
R1-073610	Discussion on resource allocation and transport format signaling	Panasonic	
R1-073611	Mapping of CCEs (control channel element) onto physical resource	Panasonic	
R1-073612	Comparison between FDM and CDM+FDM for DL L1/L2 control channel multiplexing	Panasonic	
R1-073613	DL ACK/NACK modulation and UL HARQ behaviour	Panasonic	
R1-073614	Assignment of Downlink ACK/NACK channel	Panasonic	
R1-073645	Downlink Control signaling considerations for EUTRA TDD	Nokia, Nokia Siemens Networks	
R1-073646	Multi-TTI Uplink Grants for TDD (FS1+FS2)	Nokia, Nokia Siemens Networks	
R1-073647	PDCCH UL and DL signaling entity payloads	Nokia, Nokia Siemens Networks	
R1-073648	Signaling PCH, RACH response and dynamic BCH in L1/L2 control channel.	Nokia, Nokia Siemens Networks	
R1-073649	Signalling and decoding of PRB allocations LTE downlink	Nokia, Nokia Siemens Networks	

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R1-073650	Discussion of short format DL allocation within UL grant	Nokia, Nokia Siemens Networks	
R1-073697	Investigation on Control Information Bits in PDCCH	NTT DoCoMo	
R1-073698	ACK/NACK Transmission Method in E-UTRA Downlink	NTT DoCoMo	
R1-073711	Signalling of MBSFN subframe allocations	Alcatel-Lucent	
R1-073716	Discussion of PDCCH message formats	Philips	
R1-073717	Proposal for resource allocation signalling on PDCCH	Philips	
R1-073723	Signalling for UL resource allocation	Philips	
R1-073731	On the number of hybrid ARQ processes in LTE	Ericsson	
R1-073776	On the TDD UL Grant channel	IPWireless	
R1-073778	Rotational CDM for L1/L2 Control Channel Signaling in E-UTRA Downlink	KDDI	
R1-073779	An Evaluation of the Rotational CDM for L1/L2 Control Channel	KDDI	
R1-073780	System-Level Evaluation of the Rotational CDM for L1/L2 Control Channel	KDDI	
R1-073783	Multiplexing of PDCCHs of Multiple Ues in E-UTRA Downlink	KDDI	
R1-073784	Hybrid FDM/CDM Based Multiplexing for ACK/NACK Signals in E-UTRA Downlink	KDDI	
R1-073785	Multiplexing for L1/L2 Control Signals in E-UTRA Downlink	KDDI	
R1-073795	DL Unicast Resource Allocation Signalling using L1L2 control channels	NEC Group	(R1-073458)
R1-073809	PDCCH contents – status from e-mail discussions	Ericsson	
R1-073810	PDCCH payload formats and sizes	Panasonic	(R1-073606)
R1-073835	Outcome from offline discussions on Downlink Control Signaling	Ericsson, Qualcomm, Nokia, Nokia Siemens Networks, Panasonic, Motorola, NEC, Alcatel-Lucent, Samsung, LGE, Nortel, Huawei, TI, Mitsubishi, NTT DoCoMo, KDDI, ETRI	
R1-073870	Notes from offline discussions on PDCCH	Discussion moderator (Ericsson)	

7.2.4 Uplink Control Signaling

R1-073749	E-mail discussion summary on uplink control signalling	Ericsson	

The document was presented by Stefan Parkvall from Ericsson and provides the results of email discussions on UL Control Signalling w.r.t:

- Sequence selection for PUCCH
- Hopping sequences for PUCCH
- Orthogonal (covering) sequences for ACK/NAK information part
- Orthogonal (covering) sequences for reference signals in PUCCH format 0 and 1

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- Pairing of RS and information cover sequecens for PUCCH format 0 and 1
- Details on PUCCH for frame structure type 2

Discussion (Question / Comment):
Decision: Document is noted.

Conclusions from email discussion:

- Sequence selection for PUCCH: Reuse the sequence generation method agreed for 1 RB RS for PUSCH CAZAC sequences generation. If additional CQI bits are needed on PUCCH, e.g. concatenation or the proposal in 3658 can be considered until next meeting.

- Orthogonal "cover" sequences for ACK/NAK only case: Use length-4 Hadamard sequences for the information part.
  - Mixed case with ACK/NAK and SRS: FFS

- Orthogonal "cover" sequences for RS in PUCCH format 0, 1 (ACK/NAK only): Use length-3 (for normal CP) and length-2 (for extended CP) DFT sequences for RS covering in PUCCH format 0 and 1.

- Pairing of RS and information "cover" sequences: UL ACK/NACK code allocation with different cyclic shift values when block-wise spreading codes are different
  - Following block-wise spreading codes are used
    - (1,1,1), (1,$e^{j2pi/3}$, $e^{j4pi/3}$), (1, $e^{j4pi/3}$, $e^{j8pi/3}$) for RS part
    - N out of four length-4 Hadamard sequences (1,1,1,1), (1,1,-1,-1), (1,-1,-1,1), (1,-1,1,-1) for ACK/NACK part (marked as TBD in the table below)

Code allocation for UL ACK/NACK

	Block-wise spreading code for RS			Block-wise spreading code for ACK/NACK data			
Cyclic shift	(1,1,1)	(1,$e^{j2pi/3}$, $e^{j4pi/3}$)	(1, $e^{j4pi/3}$, $e^{j8pi/3}$)	TBD	TBD	TBD	TBD
0							
1							
2							
3							
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- Details on PUCCH for frame structure type 2: Adopt frequency hopping for PUCCH in FS2. Use the same CP for PUCCH as for PUSCH. Simultaneous support of no hopping FFS.

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R1-073658	Increasing the size of CQI by means of enhanced sequence modulation	Nokia Siemens Networks, Nokia	(R1-073000)

The document was presented by Timo Lunttila from NSN and shows link performance enhancement of multi-sequence modulation over single sequence modulation. Multi-sequence modulation is proposed as a working assumption for CQI transmitted on PUCCH.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073618	Usage of Cyclic Shifts and block-wise spreading codes for Uplink ACK/NACK	Panasonic, Texas Instruments	

The document was presented by (…) from Panasonic.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073529	PUCCH channel structure for TDD with FS2	CATT, Huawei	

The document was presented by Tang Hai from CATT.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073652	ACK/NACK transmission in PUCCH for TDD FS2	Nokia, Nokia Siemens Networks	

The document was presented by Xiang Guang Che from Nokia and proposes ACK/NACK structure in TDD (FS2) with multiplexing of intra-TTI hopping and non-hopping.

Discussion (Question / Comment):
Decision: Document is noted.

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R1-073842	Notes from uplink control signalling discussions	Ad Hoc Chairman

The document was presented by Stefan Parkvall from Ericsson as a result of the offline discussion that occurred during the week.

Discussion (Question / Comment): Panasonic made a remark that FFS in last bullet of the notes was covered and solved in R1-073858.
Decision: Document is agreed.

The following set of documents has not been treated.

R1-073259	Details on CQI format	Qualcomm Europe	
R1-073260	Joint coding of CQI and ACK	Qualcomm Europe	
R1-073261	Support of ACK repetition in the UL of E-UTRA	Qualcomm Europe	
R1-073262	Details on scheduling requests	Qualcomm Europe	
R1-073263	UL control details for TDD	Qualcomm Europe	
R1-073283	TDD PUCCH	IPWireless	
R1-073291	Uplink Signaling Support for DL Rank Adaptation with Fixed Precoding	Nortel	

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R1-073292	Further Discussion on the Differential Feedback of PMI for LTE Downlink Closed-Loop MIMO	Nortel	
R1-073316	CAZAC sequence for PUCCH	Toshiba	
R1-073320	Adaptive Best-M Based Scheme for CQI Reporting in the LTE UL	SHARP	
R1-073321	Improved Flexibility/Performance CQI+ACK/NACK coding in the E-UTRA uplink	SHARP	
R1-073322	UL physical channel for CQI report	SHARP	
R1-073350	Performance Comparison of Distributed-Haar Based Compression for CQI Feedback in E-UTRA	InterDigital Communications LLC	
R1-073351	Performance Comparison of Full Band CQI Reporting Using Haar Compression for E-UTRA	InterDigital Communications LLC	
R1-073379	UL ACK/NACK Resource Provisioning	Motorola	
R1-073380	UL ACK/NACK Implicit Mapping	Motorola	
R1-073381	UL ACK/NACK for TDD	Motorola	
R1-073382	Scheduling Request Mechanism for EUTRA Uplink	Motorola	
R1-073383	Joint feedback for E-UTRA downlink precoding and CQI	Motorola	
R1-073384	CQI Feedback Schemes for E-UTRA	Motorola	
R1-073385	CQI Coding Schemes	Motorola	
R1-073386	Uplink transmission of CQI and Ack/Nack	Motorola	
R1-073387	Performance of CQI Feedback Schemes	Motorola	
R1-073388	UL L1/L2 control signals with data Multiplexing Details	Motorola	
R1-073389	PDCCH Downlink Format for (MIMO) precoding and non-precoding modes	Motorola	
R1-073390	PDCCH UL format	Motorola	
R1-073391	Persistent Scheduling of PUCCH resources	Motorola	
R1-073412	Randomization of intr-cell interference in PUCCH	ETRI	
R1-073413	Sequence allocation and hopping for uplink ACK/NAK channels	ETRI	
R1-073422	Preamble Based Scheduling Request for E-UTRA	Texas Instruments	
R1-073423	Design Aspects of UE Feedback	Texas Instruments	
R1-073424	Rank and PMI Feedback Rate – Analysis	Texas Instruments	
R1-073425	Rank Feedback Rate – System Simulation	Texas Instruments	
R1-073426	PMI Feedback Rate – System Simulation	Texas Instruments	
R1-073427	Frequency Granularity of MIMO Pre-coding for E-UTRA	Texas Instruments	
R1-073428	CQI Feedback Reduction Scheme for E-UTRA	Texas Instruments	
R1-073429	Coherent Uplink ACK/NAK Transmission with High Speed UEs	Texas Instruments	

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R1-073430	Simultaneous ACK/NAK and SR Transmission in Uplink	Texas Instruments	
R1-073431	Simultaneous CQI and ACK/NAK Transmission in Uplink	Texas Instruments	
R1-073432	Uplink ACK/NAK Transmission for Persistently Scheduled Downlink Packets	Texas Instruments	
R1-073461	CQI + ACK/NACK transmission in PUCCH	NEC Group	
R1-073462	PUCCH allocation for ACK/NACK transmission	NEC Group	
R1-073463	Multiplexing of uplink data-non-associated control signal with data	NEC Group	
R1-073464	Detail of ACK/NACK and CQI transmission without data transmission	NEC Group	
R1-073465	Way Forward for Uplink Blind Decoding	NEC Group	
R1-073473	Multiplexing of PUCCH and Sounding RS	Fujitsu	
R1-073485	Proposed Scheduling Request (SR) structure and multiplexing with PUCCH	LG Electronics	
R1-073486	Erroneous operation handling caused by DL/UL control channel failure	LG Electronics	
R1-073487	Proposed PUCCH slot format considering sounding RS transmission	LG Electronics	R1-073834
R1-073488	Mapping Relations between DL CCE and UL ACK/NACK	LG Electronics	
R1-073489	Delta CQI in spatial domain for SU-MIMO	LG Electronics	
R1-073490	Separate transmission of CQI values and indexes considering reporting period	LG Electronics	
R1-073491	Frequency granularity of CQI and PMI feedback	LG Electronics	
R1-073512	Feedback method for CQI, PMI and rank	Huawei	
R1-073521	Multiplexing of Scheduling Request Indicator	Huawei	
R1-073522	Code Allocation for UL ACK/NACK Channels	Huawei	
R1-073530	PUCCH formats for ACK/NACK and CQI transmission for TDD with FS2	CATT, Huawei	
R1-073531	Timing relationship between the UL ACK/NACK and DL sub-frames for TDD	CATT	
R1-073532	Uplink ACK/NACK transmission for LTE TDD	CATT	
R1-073540	Simultaneous UE transmission of ACK/NAK and CQI	Samsung	
R1-073541	UL ACK/NACK channel structure	Samsung	
R1-073542	UL ACK/NACK resource indication for supporting persistent scheduling	Samsung	
R1-073544	Control signaling transmission format in presence of data in E-UTRA UL	Samsung	
R1-073545	CQI report transmission using PUSCH resource	Samsung	
R1-073546	RB-wise regrouping of UL control	Samsung	
R1-073555	Performance of single CQI feedback for 2CW SU-MIMO	Samsung	
R1-073562	LTE uplink CQI report format	Samsung	

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R1-073564	Selection of Orthogonal Cover and Cyclic Shift for High Speed UL ACK Channels	Samsung	
R1-073571	PUCCH Transmission without Data in E-UTRA	Samsung	
R1-073572	Control Signaling Location in Presence of Data in E-UTRA UL	Samsung	
R1-073577	Implicit ACK/NAK Multiplexing in PUCCH CQI Sub-Frame Structure	Samsung	
R1-073581	Implicit mapping of CCE to UL ACK/NACK resource	Samsung	
R1-073589	Multiplexing of Sounding RS and PUCCH	ZTE	
R1-073602	Incremental CQI Feedback Scheme and Simulation Results	Alcatel-Lucent	
R1-073616	Signaling parameters for UL ACK/NACK resources	Panasonic	
R1-073617	Ordering of the implicit resource allocation table for Uplink ACK/NACK	Panasonic	
R1-073619	Cell Specific Cyclic Shifts and block-wise spreading codes for Uplink ACK/NACK	Panasonic	
R1-073620	Clarification of Implicit Resource Allocation of Uplink ACK/NACK Signal	Panasonic	
R1-073621	Variable Phase Definition of the Reference Signal for CQI in PUCCH	Panasonic	
R1-073630	Discussion on CQI Report Metric (SINR vs TBS)	Panasonic	
R1-073631	DCT Partitioning for CQI Reporting	Panasonic	
R1-073632	CQI quantization for SU-MIMO	Panasonic	
R1-073633	Rank feedback in downlink MIMO	Panasonic	
R1-073634	PUCCH modulation for multi sequence transmission	Panasonic	
R1-073651	CQI transmission in PUCCH for TDD FS2	Nokia, Nokia Siemens Networks	
R1-073653	Detection and DTX Performance of CQI+ACK/NACK transmitted on PUCCH	Nokia Siemens Networks, Nokia	
R1-073654	Scheduling Request supporting High Doppler	Nokia Siemens Networks, Nokia	
R1-073655	UL/DL resource allocation signaling errors and their impact to UL multiplexing design	Nokia Siemens Networks, Nokia	(R1-073013)
R1-073656	ACK/NACK transmission with UL data	Nokia Siemens Networks, Nokia	(R1-073014)
R1-073657	ACK/NACK modulation with UL data	Nokia Siemens Networks, Nokia	(R1-073015)
R1-073659	PUCCH sequence modulation sequences	Nokia Siemens Networks, Nokia	(R1-073001)
R1-073660	On CQI coding in PUCCH	Nokia Siemens Networks, Nokia	(R1-073004)
R1-073661	Signaling of Implicit ACK/NACK resources	Nokia Siemens Networks, Nokia	(R1-073006)
R1-073662	CQI per PRB vs. per group of best PRBs	Nokia Siemens Networks, Nokia	
R1-073700	PUCCH Structure Considering Sounding RS Transmission in E-UTRA Uplink	NTT DoCoMo	
R1-073701	Basic Method for CQI Feedback in E-UTRA	NTT DoCoMo	
R1-073702	Transmission Scheme for ACK/NACK and CQI Information from Same UE in E-UTRA Uplink	NTT DoCoMo	
R1-073703	Investigation on Performance of PUCCH in Coverage-limited Conditions	NTT DoCoMo	

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R1-073704	Feedback Control for MBMS in E-UTRA	NTT DoCoMo	
R1-073705	Persistent Scheduling in E-UTRA	NTT DoCoMo	
R1-073718	Vector quantisation with successive refinement for MIMO feedback	Philips, NXP Semiconductors	
R1-073719	CQI reporting for TDD	Philips, NXP Semiconductors	
R1-073732	PUCCH FH in TDD frame structure Type2	Ericsson	
R1-073733	Allocation of uplink control resources	Ericsson	
R1-073746	On CQI Reporting	Ericsson	
R1-073758	Uplink Control Signaling with Persistent Scheduling	Motorola	
R1-073766	Way forward for CQI reporting	Motorola	
R1-073769	Multiplexing the Scheduling Request in the Uplink	Alcatel-Lucent	
R1-073773	Signaling of Frequency Hopping for UL Transmission	Alcatel-Lucent	
R1-073781	Uplink Data-non-associated Control Signaling in E-UTRA	KDDI	
R1-073782	Scheduling Request Channel in E-UTRA Uplink	KDDI	
R1-073799	Enhanced CQI Feedback with Reduced Overhead for E-UTRA	Icera Semiconductor	
R1-073834	Proposed PUCCH slot format considering sounding RS transmission	LG Electronics	(R1-073487)

7.2.5 Mapping of virtual resource blocks to physical resource blocks

From previous meetings, the main remaining issues are:

- DL RB mapping
  - value of Nd
  - mapping of DVRB onto PRBs
  - N_DPRB
  - use of remaining RE in BCH subframe
- UL RB mapping (resource allocation with uplink hopping).

DL RB mapping

R1-073393	DL distributed transmission summary	Motorola	

The document was presented by Brian Classon from Motorola and provides a summary of the email reflector discussion on DL distributed transmission prior to the Athens meeting, including a potential agreement on the values of Nd and a clarification of terminology for distributed transmissions.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion from the paper

Many companies found acceptable the following proposal:

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- Nd=2 and/or 3, where N_DPRB need not be known.
- Nd=6 can also be considered instead of Nd=3 (FFS)
- FFS whether Nd may be a single known value, based on BW, semi-static, dynamic.

R1-073687	RB-level Distributed Transmission Method for Shared Data Channel in E-UTRA Downlink	NTT DoCoMo	

The document was presented by Nobuhiko Miki from NTT DoCoMo and addresses the following remaining issues:

- Definition of mapping: How to map the virtual resource elements (REs) of one virtual resource block (VRB) into physical resource blocks (PRBs) for distributed transmission
- Number of PRBs a distributed virtual resource block (DVRB) is mapped onto, N_D
- Signaling for distributed transmission

Discussion (Question / Comment):
Decision: Document is noted.

R1-073574	Distributed PDSCH Transmission in E-UTRA	Samsung	

The document was presented by Aris Papasakellariou from Samsung and reviews the possible alternatives for distributed PDSCH transmission and states preferred ones in accordance with attributes agreed in Kobe.

- A physical resource block (PRB) contains data only for localized or for distributed transmission.
- The size of a distributed virtual resource block (DVRB) equals a PRB.
- DVRBs for a UE are distributed over 2 or more PRBs.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073392	E-UTRA DL Distributed Transmission Mapping rules and Performance	Motorola	

The document was presented by (…) from Motorola and addresses the feasibility of a fully dynamic DVRB assignment, using the same general procedure as for non-DVRB allocations.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073615	Distributed channel mapping	Panasonic	

The document was presented by (…) from Panasonic and addresses the distributed VRB to PRB mapping and the related signaling.

Discussion (Question / Comment):
Decision: Document is noted.

According to the above contributions, the different proposals for Nd values are:

- Nd=2 only
- Nd=2 and Nd=3 (for 1x2)
- Nd=3 and Nd=2 (for small BW)
- Nd=2 (light traffic) and Nd=6 (heavy traffic)
- Nd=2 and Nd=3 (semi-static, related to traffic)
- Nd=2 (10MHz), Nd=3 (5MHz)

The following set of documents has not been treated.

R1-073265	Pseudo-random hopping pattern for PDSCH	Qualcomm Europe	

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R1-073293	Further Discussion on the Diversity VRB Mapping Schemes	Nortel	
R1-073442	Resource block mapping for EUTRA downlink distributed transmissions	Mitsubishi Electric	
R1-073466	Cell-specific Resource Block Mapping for Downlink Distributed Transmission	NEC Group	
R1-073467	DL Distributed Resource Signalling for EUTRA	NEC Group	
R1-073513	Cell-specific mapping of distributed virtual resource blocks	Huawei	
R1-073588	Distributed Transmission in E-UTRA Downlink	ZTE	
R1-073601	Distributed Virtual Resource Block Mapping for Persistent Resource Allocation as VoIP	Alcatel-Lucent	
R1-073720	Way forward for DVRB to PRB mapping for EUTRA downlink	Philips, NXP Semiconductors	
R1-073772	VRB addressing for localized and distributed DL transmission	Alcatel-Lucent	

UL RB mapping

The following set of documents has not been treated.

R1-073264	PUSCH and PUCCH hopping patterns	Qualcomm Europe	
R1-073294	RB Hopping for Uplink Data Transmission	Nortel	
R1-073394	UL Resource Allocation for Frequency-diverse (hopping) Allocations	Motorola	
R1-073468	Frequency Hopping Pattern for EUTRA Uplink	NEC Group	
R1-073492	Two alternative approaches for UL frequency hopping	LG Electronics	
R1-073537	UL LFDMA with hopping	Samsung	
R1-073578	Uplink time domain hopping for E-UTRA TDD	Samsung	
R1-073583	Combination of uplink semi-persistent schedule and frequency hopping	ZTE	
R1-073685	Usage of Remaining Resource Elements in Resource Blocks Multiplexed with PBCH and SCH	NTT DoCoMo	
R1-073688	Control Signaling for Uplink Frequency Hopping in E-UTRA	NTT DoCoMo	

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R1-073867	Proposed way forward on DL distributed transmission	Ericsson, Motorola, Samsung, NTT DoCoMo, NEC, Huawei, LGE, Philips, Interdigital, Nortel, Qualcomm, Mitsubishi, TI, Alcatel-Lucent, Freescale, Nokia, Nokia-Siemens Networks, ZTE

The document was presented by Erik Dahlman from Ericsson.

Discussion (Question / Comment): Although Panasonic didn't co-source the proposed way forward, Panasonic supports it. There was still some concern w.r.t. "(FFS if *Nd* = 3 is needed)" comment.

Decision: Document is noted and shall be revised and agreed in R1-073887 (get the "Ericsson confidential" removed from the paper and add Panasonic's name). Consensus is needed to remove Nd=3.

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7.2.6 Remaining details on DL MIMO, TX diversity and beamforming

Dedicated beamforming

The following set of documents has not been treated.

R1-073305	Discussion on Beamforming	Nortel	
R1-073665	On the Need of Downlink Dedicated RS	Nokia, Nokia Siemens Networks	
R1-073395	Beamforming for E-UTRA	Motorola	
R1-073584	Dedicated Beam-forming supported in E-UTRA DL	ZTE	

Details on existing schemes

R1-073551	Refinement of 2 Tx antenna precoding codebook	Samsung	

The document was presented by Cornelius Van rensburg from Samsung and proposes an alternative text for TS 36.211 to correct and align with Orlando's working assumption.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073845	Remaining Details on SU-MIMO for E-UTRA	Texas Instruments	(R1-073433)

The document was presented by Eko Onggosanusi from TI.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion: The Codebooks in TS 36211 are kept as they are.

R1-073734	Realizing Codebook Subset Restriction	Ericsson	

The document was presented by (…) from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusions from both previous contributions:

- Same signalling format used regardless the size of the subset
- Use bitmap signalled on higher layers (RRC) to inform the UE specific subset
- All subsets should be possible to be signalled

The following set of documents has not been treated.

R1-073274	Final details on CDD precoding	Qualcomm Europe	
R1-073296	Discussion on Rank Adaptation Based on Shadowing for High Speed UEs	Nortel	
R1-073494	Further Consideration on CDD-based Precoding	LG Electronics	
R1-073735	Extending Codeword to Layer Mapping for Efficient Support of Retransmissions	Ericsson	

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Need for frequency selective pre-coding

R1-073707	Investigation on Frequency Granularity of SU-MIMO Precoding in E-UTRA Downlink	NTT DoCoMo	

The document was presented by (…) from NTT DoCoMo and investigates the benefit of the frequency selective precoding for 4-by-2 MIMO transmission in terms of the link level throughput performance in order to clarify whether the frequency selective precoding for SU-MIMO is necessary for 4-Tx MIMO transmission or not.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion: Based on the conclusions of the paper and the number of companies still willing to keep the frequency selective pre-coding option, there're no agreement to change the current WA.

Spatial Multiplexing for high speed scenarios

The following set of documents has not been treated.

R1-073566	Further Considerations of CDD Precoding for High-speed UEs	Samsung	
R1-073304	Performance Evaluation of Rate-2 SFBC versus Fixed Precoding with and without Long-delay CDD	Nortel	

MU-MIMO

The following set of documents has not been treated.

R1-073266	Calibration procedures for TDD beamforming	Qualcomm Europe	
R1-073295	Further Simulation Evaluation of 2x2 Pre-coding Gain	Nortel	
R1-073297	Rank Adaptation for Fixed Pre-coding	Nortel	
R1-073298	Further discussion on Spatial Multiplexing for MBSFN	Nortel	
R1-073299	Update on HARQ Performance Enhancement	Nortel	
R1-073300	Precoding Matrix Verification Based on Beacon RS in E-UTRA Downlink	Nortel	
R1-073301	UL MU-MIMO Performance Improvement for E-UTRA with SIC Receiver	Nortel	
R1-073302	Further Discussion on RE Mapping of SFBC+FSTD Based TxD for Shared Data Channel	Nortel	
R1-073303	RE Mapping of SFBC+FSTD Based TxD for PDCCH	Nortel	
R1-073306	Link Level Evaluation on Fixed Beamforming plus MIMO Precoding versus Adaptive Beamforming	Nortel	
R1-073317	Pre-coding Codebook for EUTRA MIMO Downlink	Toshiba	
R1-073318	DL Transmit Diversity with Spatial Multiplexing for 4 TX antennas	LSI Corporation	
R1-073352	Binary Differential Feedback Using Existing Codebooks for E-UTRA	InterDigital Communications LLC	
R1-073353	MU-MIMO Codebook Subset Selection and Signaling Considerations for E-UTRA	InterDigital Communications LLC	
R1-073396	MU-MIMO for E-UTRA	Motorola	

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R1-073397	Requirement for DL PMI Signaling	Motorola	
R1-073398	MBSFN Performance with SFBC and Spatial Multiplexing	Motorola	
R1-073493	Further Consideration on RE Mapping for 4Tx PDSCH	LG Electronics	
R1-073495	CDD-based Precoding for Open-loop SM in E-UTRA downlink	LG Electronics	
R1-073550	System Performance for 2 Tx antenna MU-MIMO	Samsung	
R1-073554	Performance of orthogonal Hybrid ARQ for multi-user MIMO in E-UTRA uplink	Samsung	
R1-073635	Control signaling aspects of MU-MIMO	Panasonic	
R1-073663	Channel Quality Indicator for LTE MU-MIMO	Nokia, Nokia Siemens Networks	
R1-073664	Effect of Precoding Granularity on LTE Multiuser MIMO	Nokia, Nokia Siemens Networks	
R1-073666	LTE Multiuser MIMO and Interference Suppression in the UE	Nokia, Nokia Siemens Networks	
R1-073667	Number of spatially multiplexed users for LTE DL MU-MIMO	Nokia, Nokia Siemens Networks	
R1-073708	Investigation on Throughput Performance of MU-MIMO in E-UTRA Downlink	NTT DoCoMo	
R1-073721	Codebook for MU-MIMO	Philips	
R1-073722	CQI definition for MU-MIMO	Philips	
R1-073759	Comparison of SU and MU MIMO Performance	Motorola	
R1-073760	Channel Estimation for Open Loop Beamforming	Motorola	
R1-073761	Open Loop Beamforming	Motorola	

7.2.7 SSC, PSC

NOT TREATED.

7.2.8 PBCH

NOT TREATED.

7.2.9 RACH

From previous meetings, the main remaining issues are:

- Exact definition of ZC index number
- Exact PRACH slot configuration
- Exact value of cyclic shift
- Cyclic shift restriction method for high mobility cells

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R1-073404	Random Access E-mail Reflector Summary	Motorola	

The document was presented by Amitava Ghosh from Motorola and outlines the summary of the on-going discussions.

Discussion (Question / Comment):
Decision: Document is noted.

Following conclusions could be drawn from the email discussion:

- Pair-wise allocation of root ZC index u and N_{zc}-u
- Predefined PRACH slot allocation
  - only 1 PRACH at a time (except for TDD)
  - allow RACH period longer than 10 ms
- Allow frequency hopping of the PRACH
  - only one frequency hopping pattern common to all cells
- Define two formats for the repeated preamble structure
  - one format to support maximum cell size in the 30km range
  - one format to maximum cell size in the 100km range
  - T_cp as in the table below

T_{CP}		
Extended	**Repeated A (~100 km)**	**Repeated B (~30 km)**
684 μs	684 μs	202.6 μs

R1-073836	RACH sequence allocation and indication to the cell	Panasonic	(R1-073622)

The document was presented by (…) from Panasonic and discusses the exact definition of ZC index number, i.e. pre-defined root ZC sequence index order, with taking into account appropriate ZC sequence allocation from L1 perspectives, i.e. implementation complexity, cubic metric (CM) property, normal/high mobility cell configuration and reuse factor (cell planning).

Discussion (Question / Comment):
Decision: Document is noted.

R1-073534	Random access preamble structure for LTE TDD frame structure type 2	CATT	

The document was presented by Tang Hai from CATT and provides details about random access burst structures and preamble sequence parameters for LTE TDD frame structure type 2.

Three new random access burst structures with Guard Period are introduced so that the random access channels can be allocated in any uplink timeslots. For different cell radius with different Guard Period, these preamble formats can be flexibly configured by high layers.

Discussion (Question / Comment): Supported by Ericsson (R1-073737) and Nokia.
Decision: Document is noted.

R1-073737	RACH for frame structure type 2	Ericsson	

The document was briefly introduced by David Astely from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusion:

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- Agreed to capture both tables from R1-073737 in 36.211 and to modify the table in 36211.

The following set of documents has not been treated.

R1-073282	RACH for TDD frame structure type 1	IPWireless	
R1-073403	RACH Slot Configurations	Motorola	
R1-073435	Random Access Preamble L1 Parameters in E-UTRA	Texas Instruments	
R1-073436	Random Access Slot Configurations	Texas Instruments	
R1-073498	Cyclic Shift Configuration Set for Non-Synchronized RACH	LG Electronics	
R1-073499	Additional Burst Types for Non-Synchronized RACH	LG Electronics	
R1-073501	Preamble Index Mapping for Non-Synchronized RACH	LG Electronics	
R1-073502	Comparison of Formula for Restricted Cyclic shift Set	LG Electronics, Nokia, Nokia Siemens Networks	
R1-073515	Multiple values of cyclic shift increment NCS	Huawei	
R1-073516	Specification of restricted set of cyclic shifts of root Zadoff-Chu sequences	Huawei, Panasonic	
R1-073552	Cyclic Shift Restrictions for RACH in Small, Medium and Large Cells	Samsung	
R1-073553	Determination of the Cyclic Shift Amount, Ncs	Samsung	
R1-073595	Group-based Re-ordering Method of ZC Sequence in RACH	ZTE	
R1-073623	RACH sequence allocation for efficient matched filter implementation	Panasonic	
R1-073624	Limitation of RACH sequence allocation for high mobility cell	Panasonic	
R1-073689	On PRACH Structure for 1.4 MHz System Bandwidth	NTT DoCoMo	
R1-073690	PRACH Multiplexing Method and Slot Configuration for E-UTRA Uplink	NTT DoCoMo	
R1-073709	Discussion on contention and dedicated resource allocation	LG Electronics	
R1-073712	On the specification of restricted set of cyclic shifts of root Zadoff-Chu sequences	Huawei, Panasonic, LGE, Nokia, Nokia Siemens Networks	

7.3 Finalization of TS 36.212

R1-073833	Summary of the e-mail discussion on channel coding	NTT DoCoMo	(R1-073438)

The document was presented by Sadayuki Abeta from NTT DoCoMo and shows the results of the discussion on channel coding for LTE. The issues discussed in the e-mail reflector are listed below

- Turbo code rate matching scheme
  - Soft buffer size (1 stage or 2 stage)
  - Split of soft buffer memory between processes
  - Sub-block interleaver optimization
- Convolutional code rate matching scheme
- Segmentation detail

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- RE assigned to each codeblock segment for rate matching
- CRC attachment (transport block, code block, hybrid?)

- Channel interleaver
- Constellation rearrangement
- HARQ
  - HARQ process number

Discussion (Question / Comment): Summary shows convergence on some of the points
Decision: Document is noted.

According to document, following conclusions are drawn:

- Turbo code rate matching scheme details
  - Subblock interleaver optimisation
    - keep current working assumption ($\sigma=2, \delta=1$) as it is
- Convolutional code rate matching scheme
  - current way forward (R1-073207) agreed as working assumption
- Segmentation details
  - "equal size" method as described in R1-073847 agreed as way forward
  - CRC attachment: Proposal in R1-073843 agreed as way forward.
    - The "FFS" in point 3 in R1-073843 is addressed by R1-073850
- Channel interleaver
  - For DL: No channel interleaving is the working assumption
    - Continue discussion on S/P bit interlacing (3669) and bit priority mapping (BPM) (3710, 3593)
  - For UL: Spread the modulation symbols for each code block evenly across all long blocks
    - Continue discussion offline to refine the proposal
- Constellation rearrangement
  - No constellation rearrangement is working assumption.
    - Review the necessity after the discussion on other channel coding detail if needed.
- HARQ process number
  - Continue discussion offline on timing requirements and definition of timing relation

- PUCCH channel coding

R1-073847	Way forward on Physical Channel Segmentation	Nokia Siemens Networks, Nokia, Motorola, Samsung, LGE

The document was presented by Thomas Chapman from NSN.

Discussion (Question / Comment):
Decision: Document is noted.

- Segmentation details
  - "equal size" method as described in R1-073847 agreed as way forward

R1-073843	Way forward for CRC attachment for turbo-coded transport channels	Samsung

The document was presented by Zhouyue Pi from Samsung.

Discussion (Question / Comment):
Decision: Document is noted.

- Segmentation details
  - CRC attachment: Proposal in R1-073843 agreed as way forward.

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R1-073852	CRC attachment	Alcatel-Lucent, Freescale, Marvell, Motorola, TI, ZTE

The document was presented by (...) from Motorola.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073850	Text change to code block segmentation	Motorola

The document was presented by (...) from Motorola and concerns the description of the code block segmentation to capture the special case of one code block segment per TB.

Discussion (Question / Comment): Samsung requested more time to review all the details in proposed coding.
Decision: Document is noted and is further revised in agreed document R1-073863

R1-073361	Uplink channel interleaving	Motorola	

The document was presented by (...) from Motorola and discusses the performance of uplink channel interleaving candidates for LTE.

Discussion (Question / Comment): Samsung requested more time to review all the details in proposed coding.
Decision: Document is noted.

R1-073841	Summary of the number of HARQ processes	Panasonic	

The document was presented by Hidetoshi Suzuki from Panasonic and summarizes the processing delay of the proposals.

Discussion (Question / Comment): Samsung suggested to add their proposal into the list.
Decision: Document is noted.

The following set of documents has not been treated.

R1-073268	CRC for multiple code block transmissions	Qualcomm Europe	
R1-073269	Rate matching details for control and data multiplexing	Qualcomm Europe	
R1-073270	Number of HARQ processes	Qualcomm Europe	
R1-073276	Transmission of coded bits from circular buffer	Qualcomm Europe	
R1-073277	Transmission of coded blocks within the TTI	Qualcomm Europe	
R1-073286	TDD HARQ timing	IPWireless	
R1-073310	FEC Code Block-based CRC	Nortel	
R1-073359	On supporting 1st stage turbo code rate matching	Motorola	
R1-073360	Convolutional code rate matching in LTE	Motorola	
R1-073362	Downlink channel interleaving	Motorola	
R1-073363	RE sizing for turbo code block segments	Motorola	
R1-073364	Soft Buffer size per HARQ Process	Motorola	
R1-073365	UE Capability	Motorola	
R1-073366	HARQ timing	Motorola	

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R1-073410	On Rate Matching parameters for TS 36.212	Broadcom	
R1-073411	Text change Proposal for Rate Matching in TS 36.212	Broadcom	
R1-073470	Adoption of 2-stage Rate Matching and modified IR-HARQ	Fujitsu	
R1-073503	Spatial mapping of code blocks for 4 TX SU-MIMO	LG Electronics	
R1-073504	On the consideration of CRC attachment	LG Electronics	
R1-073533	HARQ RTT and Process Number in TDD	CATT	
R1-073548	HARQ redundant symbol selection for synchronous HARQ	Samsung	
R1-073549	HARQ symbol to RE mapping	Samsung	
R1-073558	Code block CRC for DL-SCH and UL-SCH	Samsung	
R1-073563	Redundancy version definition for DL-SCH	Samsung	
R1-073579	Code block reordering in HARQ retransmissions	Samsung	
R1-073593	Bit priority mapping scheme	ZTE	
R1-073636	Number of HARQ processes	Panasonic	
R1-073669	Interleaving for LTE Shared Channels	Nokia Siemens Networks, Nokia	
R1-073670	Soft Combining in LTE	Nokia Siemens Networks, Nokia	
R1-073671	Physical Channel Segmentation	Nokia Siemens Networks, Nokia	
R1-073672	Bit Ordering for CRC	Nokia Siemens Networks, Nokia	
R1-073673	On the Number of HARQ-processes	Nokia, Nokia Siemens Networks	
R1-073699	Views on RTD for Hybrid ARQ in E-UTRA	NTT DoCoMo	
R1-073710	Performance comparison of identity channel interleaving, channel interleaving within one OFDM symbol, and systematic/parity bit interlacing	Alcatel-Lucent	
R1-073730	ID-specific CRC on DL-SCH/UL-SCH	Ericsson	
R1-073739	Performance of Convolutional Code RM Algorithms	Ericsson	
R1-073740	Turbo Decoding Resource Budgeting	Ericsson	
R1-073741	Performance and Complexity of Per-Segment CRC Methods	Ericsson	
R1-073742	Simplified RE Assignment for Code Block Segments	Ericsson	
R1-073751	On open issues channel coding	Ericsson	
R1-073753	UE Capability and MBSFN	Motorola	
R1-073767	UL/DL HARQ Timing	Alcatel-Lucent	
R1-073793	Utilization of the Redundancy Version (RV) Parameter for HARQ	Broadcom	

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R1-073806	On Rate Matching Parameters for Turbo Codes	Ericsson	
R1-073811	Turbo rate matching fine tuning	Nokia Siemens Networks, Nokia	
R1-073822	On Early Stopping Rules for Turbo Decoding	Ericsson	
R1-073849	RV and NDI definition	Motorola	

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R1-073869	Summary of the channel coding session	NTT DoCoMo

The document was presented by Sadayuki Abeta from NTT DoCoMo as a result of the ad-hoc session on Channel coding.

Discussion (Question / Comment):
Decision: Document is noted.

Conclusions:

- Interleaver detail
  - No Bit priority mapping (BPM) is supported in LTE specification.
- Uplink interleaver
  - For the UL Channel interleaver, the basic agreement is "time first" mapping. The editor of 36212 should propose a description of the interleaver.
- HARQ process
  - (FDD)
    - Single fixed time relation between DL-SCH transmission and ACK/NAK reception at eNB
    - Single fixed time relation between UL-SCH reception and ACK/NAK transmission at eNB
    - Same number of HARQ process in DL/UL
    - Single Maximum number of HARQ process
  - (TDD)
    - Number of HARQ process according to DL/UL configuration

R1-073871	Maximum number of hybrid ARQ processes	Ericsson, Qualcomm, Nokia, Nokia Siemens Networks, Samsung, Motorola, LG Electronics, Nortel, Philips, NXP Semiconductor

The document was presented by Stefan Parkvall from Ericsson and proposes:

- Set the maximum number of hybrid ARQ processes to 8 for FDD (max N_{proc}=8)
- A UE processing time of 3 ms minus the propagation roundtrip time (T_{Rx}=3 ms – 2T_p)

Discussion (Question / Comment): NTT DoCoMo expressed their concerns that LTE shall be competitive w.r.t RTT . Freescale and Panasonic agreed in principle.
Decision: Document is agreed.

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7.4 Finalization of TS 36.213

7.4.1 Timing synchronization

NOT TREATED.

7.4.2 UL/DL Power Control

R1-073677	Summary of Power Control E-mail Discussion	Nokia Siemens Networks	

The document was presented by Jari Lindholm from NSN and provides the latest inputs from email discussion on UL PC.

Discussion (Question / Comment): Long debate w.r.t Po parameter whether it is cell or UE specific parameter.
Decision: Document is noted and has been amended during the meeting

Conclusions on UL PC formula:

- Pmax: fixed value (depends on UE class, RAN4 issue)
- Value of number of assigned RBs M=1…110, update rate is TTI
- Support of UE specific Po, with cell specific Po as special case (same value for all UEs).
    - Signalling FFS in RAN2. (LS shall be prepared in R1-073882)
- Separate value of Po for PUSCH and PUCCH
- 1dB resolution for Po
- 8 values of α : 0.4 … 1 in steps of 0.1, in addition 0 is supported
- Delta_i for PUSCH, PUCCH accumulation: 2 bits
    - Largest value is +3dB, exact values FFS.
- PL is the downlink path loss calculated in the UE
    - Derived from RSRP measurement and signalled RS Tx power
        - Should be described in 36.213, but no reported UE PL measurement needed for the UL PC formula.

LS received from RAN4 (on Thursday)

R1-073857	LS on the dynamic range of the UE transmission power	RAN4, Motorola

The document was presented by Robert Love from Motorola.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073355	E-UTRA Power control simulation results for various feedback approaches	InterDigital Communications LLC	

The document was presented by Donald Grieco from InterDigital and proposes a combined open loop and closed loop PC scheme for the PUSCH.

Discussion (Question / Comment):
Decision: Document is noted.

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R1-073882	[DRAFT] LS on UE specific power control parameter	Alcatel-Lucent

The document was presented by Rainer B from Alcatel-Lucent.

Discussion (Question / Comment):
Decision: Document is noted and final LS agreed in R1-073888.

The following set of documents has not been treated.

R1-073311	UL Power Control with Fractional Frequency Reuse for E-UTRA	Nortel	
R1-073405	Sounding Reference Signal Power Setting	Motorola	
R1-073406	Power Control Errors and Uplink Frequency Domain Scheduling	Motorola	
R1-073505	DL RE puncturing for DL RS/PSC/SSC TxP boosting	LG Electronics	
R1-073506	Intra-cell power control for uplink in E-UTRA	LG Electronics	
R1-073576	VoIP Link Adaptation Using DM RS in E-UTRA Uplink	Samsung	
R1-073596	Uplink Inter-cell Power Control based on Overload Indicator and modified IoT measurement for E-UTRA	ZTE	
R1-073674	Overload Indicator handling for LTE	Nokia Siemens Networks, Nokia	
R1-073675	Closed loop power control corrections for PUSCH	Nokia Siemens Networks, Nokia	
R1-073676	Power control headroom reports for EUTRAN uplink	Nokia Siemens Networks, Nokia	
R1-073678	Cluster based Overload Indication	Nokia Siemens Networks, Nokia	
R1-073744	UL power control for E-UTRA: Comments on open issues	Ericsson	
R1-073768	Quantization and Range of UE Specific Correction Value in PUSCH Power Control	Alcatel-Lucent	
R1-073786	Power Control for RACH	Alcatel-Lucent	
R1-073837	UE Transmit Power Accuracy and Calibration	Motorola	(R1-073407)

7.4.3 Inter-cell Interference Coordination

NOT TREATED.

7.4.4 RACH timing and preamble sequence selection

NOT TREATED.

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7.4.5 UE Procedures for downlink shared channel

R1-073844	Way forward for CQI reporting	Ericsson, CATT, Freescale Semiconductor, Huawei, Icera Semiconductor, LGE, Motorola, Nokia, Nokia Siemens Networks, Nortel, NTT DoCoMo, Panasonic, Philips, Qualcomm Europe, Samsung, Texas Instruments, ZTE

The document was presented by Stefan Parkvall from Ericsson.

Discussion (Question / Comment):
Decision: Document is noted and revised in R1-073858

R1-073858	Way forward for CQI reporting	Ericsson, CATT, Freescale Semiconductor, Huawei, Icera Semiconductor, LGE, Motorola, Nokia, Nokia Siemens Networks, Nortel, NTT DoCoMo, Panasonic, Philips, Qualcomm Europe, Samsung, Texas Instruments, ZTE, Sharp, Interdigital, IPWireless, Nextwave, Mitsubishi, Alcatel-Lucent

UE Procedures for CQI reporting and MIMO feedback reporting

The following set of documents has not been treated

R1-073314	MCS Selection for LTE	Nortel	
R1-073440	Selection of CQI reporting scheme	Mitsubishi Electric	
R1-073680	CQI Trigger Mechanism	Nokia Siemens Networks, Nokia	
R1-073681	CQI reporting requirements for EUTRA UE	Nokia Siemens Networks, Nokia	
R1-073746	On CQI Reporting	Ericsson	

UE Procedures related to TX diversity

The following set of documents has not been treated

R1-073272	Details on UL antenna switching	Qualcomm Europe	
R1-073686	Necessity of Time Diversity for PDSCH	NTT DoCoMo	

7.4.6 UE Procedures for uplink shared channel

NOT TREATED.

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7.5 Finalization of TS 36.214

R1-073787	Summary of email discussion on Measurements	Ericsson

The document was presented by Dirk Gerstenberger from Ericsson and provides status of the discussed topics:

- UE measurements
- eNB measurements

Discussion (Question / Comment): Very few comments and contributions so far on this topic. Mr Chairman requested companies' involvement for providing inputs into the Measurements discussion.
There was a long debate on how to proceed with that topic. NTT DoCoMo explained that RAN3 was preparing an LS to others WGs on eNB measurements. Then Ericsson asked for clarification on what the "load balancing" is.

Decision: Document is noted. Topic is to be revisited when RAN3 LS comes.

Way forward:

- Received total power (M1)
- Interference power over thermal noise power (IoT) (M2)
- Downlink relative transmitted carrier power (M6)
- Downlink transmitted power per RB (M7)

Way forward:

- Discuss M1, M2 and M7 also in the context of ICIC.
- Ask RAN3 about M1 and M6 and their relation to load balancing if this is found helpful in the discussion (Draft an LS in R1-073868)

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LS from RAN3 not received. To be circulated over reflector ASAP (MCC)

R1-073868	[Draft LS] Load balancing use case for eNodeB measurements	Orange, Vodafone, T-Mobile, NTT DoCoMo, Alcatel-Lucent, Ericsson

The document was presented by Thomas Sälzer from Orange.

Discussion (Question / Comment):
Decision: Document is noted and final LS agreed in R1-073885 with the addition of "e.g." in the first sentence.

R1-073285	Measurements for power control	IPWireless, Nextwave Wireless

The document was presented by Nick Anderson from IPWireless.

Discussion (Question / Comment):
Decision: Document is noted and shall be revisited in connection with UL PC.

R1-073368	UE Tx Power (PSD) Measurement and Reporting	Motorola

The document was presented by Jean-Aicard Fabien from Motorola.

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Discussion (Question / Comment): Mr Chairman recommends discussing improvements for PC rather continuing discussion on UE TX Power (PSD) Measurement.
Decision: Document is noted.

8. Combination of Higher Order Modulation and MIMO in HSDPA

R1-073347	Impact of 64QAM+MIMO HSDPA operation in the DL	Qualcomm Europe, Ericsson

The document was presented by Josef Blanz from Qualcomm and describes a possible way how to accommodate the downlink control signalling within the already existing Rel-7 format of HS-SCCH (according to RAN#36 defined work item to introduce the combination of MIMO and 64QAM)

Discussion (Question / Comment):
Decision: Document is noted.

R1-073348	Impact of 64QAM+MIMO HSDPA operation in the UL	Qualcomm Europe, Ericsson

The document was presented by Josef Blanz from Qualcomm.

Discussion (Question / Comment):
Decision: Document is noted.

R1-073582	Modulation mapping information	ZTE

The document was presented by (…) from ZTE and suggests on adding new modulation information mapping (aiming at acquiring better performance and higher peak rate).

Discussion (Question / Comment):
Decision: Document is noted. As a conclusion, the following Working Assumption is also made:

No changes in Uplink Control channel format(s) are needed. Continue the work focusing on the DL control signalling and updating the CQI tables.

9. MBSFN Downlink Optimized Broadcast 3.84Mcps TDD

R1-073789	MBSFN DOB	Ericsson

The document was presented by Lars Lindbom from Ericsson and discusses the relevance of the technical concerns raised by IPWireless with MBSFN DOB being addressed as an optimized broadcast mode in TDD.

Discussion (Question / Comment):
Decision: Document is noted.

The following CRs are identical to those presented in Kobe. Only difference concerns the specification version they refer to.

R1-073790	25.221 CR146 (Rel-7, B) "Support for MBSFN DOB operation"	Ericsson
R1-073791	25.222 CR139 (Rel-7, B) "Support for MBSFN DOB operation"	Ericsson
R1-073792	25.223 CR047 (Rel-7, B) "Support for MBSFN DOB operation"	Ericsson

Decision: Report to RAN that the CRs are identical to the ones submitted to RAN#36, with the exception that they are against the updated Rel-7 specifications (new CR revision number…)

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No additional technical issues were raised that have not been mentioned yet in previous discussions or documents.

The CRs have been reviewed by RAN1, but no agreement was reached on approval or technical endorsement.

R1-073788	MBSFN Downlink Optimised Broadcast for 3.84Mcps TDD	IPWireless

The document was presented by Nick Anderson from IPWireless and tries to explain the various technical areas of optimisation IPWireless considers important for broadcast system design in the context of the work item "MBSFN Downlink Optimised Broadcast for 3.84Mcps TDD".

Discussion (Question / Comment):
Decision: Document is noted.

R1-073801	25.201 CR036 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless

The document was presented by Nick Anderson from IPWireless.

Discussion (Question / Comment):
Decision: Document is noted. The CR has been reviewed by RAN1, but no agreement was reached on approval or technical endorsement.

R1-073802	25.221 CR147 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless

The document was presented by Nick Anderson from IPWireless. This CR is where most of the changes are to introduce the identified optimisation for downlink-only broadcast 3.84Mcps TDD. It introduces a new burst type 5.

Discussion (Question / Comment):
Decision: Document is noted. The CR has been reviewed by RAN1, but no agreement was reached on approval or technical endorsement.

R1-073803	25.222 CR140 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless
R1-073805	25.224 CR165 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless

Both documents were presented by Nick Anderson from IPWireless.

Discussion (Question / Comment):
Decision: Document is noted. The CRs have been reviewed by RAN1, but no agreement was reached on approval or technical endorsement.

R1-073859	Optimising FDD MBSFN for broadcast	IPWireless

The document was presented by Nick Anderson from IPWireless and discusses means to introduce a set of features into the FDD WCDMA physical layer for MBSFN, including:

- Support for multiple SFN areas or SFN "zones" from the same Node-B
- Support for low PAPR transmission for S-CCPCH
- Support for a native low DRX duty cycle
- Reduced transport channel processing complexity / storage requirements at the UE

Discussion (Question / Comment): The document set-up the ground of a third proposal to address broadcast applications and cover the WI defined in RAN#36.
Decision: Document is noted.

R1-073800	"Draft LS on MBSFN DOB"	IPWireless

The document was presented by Nick Anderson from IPWireless.

Discussion (Question / Comment):
Decision: Document is noted and RAN1 decides not to send the LS.

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10. Closing of the meeting

RAN1 Chairman, Mr. Dirk Gerstenberger expressed his appreciation to the delegates and the host, the European Friends of 3GPP for their supports.

The meeting was closed at 17:00.

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Annex A: List of participants at RAN1 #50

Please see excel file attached to this report

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Annex B: TSG RAN WG1 meetings in 2007

TITLE	TYPE	DATES	LOCATION	CTRY
3GPPRAN1#47bis	WG	15 - 19 Jan 2007	Sorrento	IT
3GPPRAN1#48	WG	12 - 16 Feb 2007	St Louis	US
3GPPRAN1#48bis	WG	26 - 30 March 2007	St Julians	Malta
3GPPRAN1 LTE TDD AH	AH	17-20 April 2007	Beijing	China
3GPPRAN1#49	WG	07-11 May 2007	Kobe	JP
3GPPRAN1#49bis	WG	25 - 29 June 2007	Orlando	USA
3GPPRAN1#50	WG	20-24 Aug 2007	Athens	Greece
3GPPRAN1#50bis	WG	Oct 2007	Shanghai	China
3GPPRAN1#51	WG	05 - 09 Nov 2007	Jeju	KR

MEETING TYPES	
AH = Ad Hoc	CM = Chairmen's meeting
JM = Joint	OR = Ordinary
PM = Preparatory Meeting	RG = Rapporteurs Group
RM = Resolution Meeting	SG = Steering Group
ST = Startup Meeting	TG = Task Group
WG = Working Group	XO = Extraordinary

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Annex C: List of CRs agreed at RAN1#50

Spec	CR	R	Cat	Rel	R1 Tdoc	Title	Work Item
25.201	035	1	F	7	R1-073830	Minor modification related to EDCH in 1.28Mcps TDD	LCRTDD-EDCH-Phys
25.211	242	1	F	7	R1-073825	PICH associated HS-SCCH for Enhanced CELL_FACH	RANimp-Enhstate
25.211	243	-	F	7	R1-073325	Clarification for CPC feature	RANimp-CPC
25.211	245	-	F	7	R1-073336	Clarifications on the use of S-CCPCH pilot bits for MBSFN FDD feature	MBMSE-RANPhysFDD
25.211	247	-	F	6	R1-073826	25211CR247 (Rel-6, F) "Clarification on MICH"	MBMS-RAN
25.211	246	-	A	7	R1-073826	25211CR246 (Rel-7, A) "Clarification on MICH"	MBMS-RAN
25.211	232	3	C	7	R1-073343	Enhanced F-DPCH	TEI7
25.212	252	-	F	7	R1-073327	16QAM modulation selection for HSUPA	RANimp-16QamUplink
25.212	253	-	D	7	R1-073337	Clarifications of MIMO	MIMO-Phys
25.212	254	-	F	7	R1-073339	Clarifications of CPC and MIMO	RANimp-CPC, MIMO-Phys
25.213	090	-	D	7	R1-073346	Editorial changes in 25.213 for 16QAM specification	RANimp-16QamUplink
25.214	452	2	F	7	R1-073877	CPC preamble and postamble clarification for CQI transmission	RANimp-CPC
25.214	453	-	F	7	R1-073329	Removal of Inactivity_Threshold_for_UE_Grant_Monitoring definition	RANimp-CPC
25.214	454	2	F	7	R1-073861	Corrections to HS-DSCH procedures for CELL_FACH and MIMO	RANimp-Enhstate
25.214	456	3	F	7	R1-073866	25214 CR456r3 (Rel-7,F) "Correction to Rel-7 E-DPDCH gain factor calculation"	RANimp-16QamUplink
25.214	458	1	F	7	R1-073832	25.214 CR458r1 (Rel-7, F) "Correction of 64QAM CQI tables	RANimp-64QamDownlink
25.214	459	-	F	7	R1-073340	Clarifications of CPC	RANimp-CPC
25.214	460	2	F	7	R1-073865	E-DPDCH scaling when UE is at max power	RANimp-16QamUplink
25.215	176	1	B	7	R1-073814	Adding GANSS related measurements in the FDD physical layer measurements	LCS3-GNSS-UTRAN
25.221	145	-	F	7	R1-073524	TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN	MBMSE-RANPhysLCRTDD
25.222	137	-	F	7	R1-073525	TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN	MBMSE-RANPhysLCRTDD
25.222	138	1	C	7	R1-073797	Improved E-HICH signature allocation method for LCR-TDD	LCRTDD-EDCH-Phys
25.224	164	1	F	7	R1-073808	Improvement on the power control of E-PUCH in 1.28Mcps TDD	LCRTDD-EDCH-Phys
25.224	166	-	A	7	R1-073853	Correction to the calculating formula of SIR	TEI7
25.224	167	-	A	6	R1-073854	Correction to the calculating formula of SIR	TEI6
25.224	168	-	A	5	R1-073855	Correction to the calculating formula of SIR	TEI5
25.224	169	-	A	4	R1-073856	Correction to the calculating formula of SIR	TEI4
25.221	144	-	F	7	R1-073443	Introduction of multi-frequency operation for 1.28Mcps TDD	TEI7
25.222	136	-	F	7	R1-073444	Introduction of multi-frequency operation for 1.28Mcps TDD	TEI7
25.223	046	1	F	7	R1-073839	Introduction of multi-frequency operation for 1.28Mcps TDD	TEI7
25.224	163	1	F	7	R1-073840	Introduction of multi-frequency operation for 1.28Mcps TDD	TEI7
25.225	088	-	F	7	R1-073447	Introduction of multi-frequency operation for 1.28Mcps TDD	TEI7

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Annex D: List of Outgoing LSs from RAN1#50

R1	Response to (Ic LS)	To	Cc	Title	Contact	Ref'd /Attachd Tdoc	Release	WI
R1-073827		R2		LS on maximum transport block size for HS-SCCH-less operation	Philips		Rel-7	-
R1-073817	R2-072999 (R1-073245)	R2		Reply LS on HS-SCCH-less + MIMO	Philips		Rel-7	-
R1-073875		R2	R3, R4	Request to clarify LTE states for physical layer measurements	Nokia Siemens Networks		Rel-8	LTE
R1-073885		R3	R2	Load balancing use case for eNodeB measurements	Orange		Rel-8	LTE
R1-073883		R2		Reply LS on Introduction of RAB Combination into 25.993	Nokia Siemens Networks		Rel-7	TEI7
R1-073884	R2-073003 (R1-073246)	R2		Reply LS on Physical Layer Aspects of eMBMS Counting	Philips		Rel-8	LTE
R1-073888		R2	R3, R4	LS on UE specific power control parameter	Alcatel-Lucent		Rel-8	LTE

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Annex E: List of Tdocs at RAN1 #50

Please see excel file attached to this report

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Annex F: List of actions

1. Outgoing LS.

Deadline for below action point is until 5th of September

R1-073883 Reply LS on Introduction of RAB Combination into 25.993 (Nokia Siemens Network)

ASAP

R1-073884 Reply LS on Physical Layer Aspects of eMBMS Counting (Philips)

2. Text proposal for TS and TR

Nothing to report

3. Other action points

Deadline for below action point is until 31th of August

R1-073838 25.214 CR462r1 (Rel-7, F) "Correction of MIMO CQI tables (email approval over reflector)

ASAP

LS on eNB measurements from RAN3 to be circulated (MCC)

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3GPP TSG RAN Working Group 1 (Layer 1)

List of WG1 Temporary Documents

Available	Tdoc Number	Title	Source	Agenda Item	Type	Rrevised to (from)	Conclusion/Decision
Yes	R1-073240	Draft Agenda for RAN1#50 meeting	RAN1 Chairman	2	Decision	R1-073777	Revised
Yes	R1-073241	Draft report of RAN1#49b meeting	MCC Support	3	Approval		Revised
Yes	R1-073242	Receiver performance and enhanced CELL_FACH state	RAN2, LGE	5	LS_in	= R2-072334	Noted
Yes	R1-073243	Reply LS on physical layer aspects of Enhanced CELL_FACH state in FDD from WG1	RAN2, Alcatel-Lucent	5	LS_in	= R2-072335	Noted
Yes	R1-073244	LS on Introduction of Very low bitrate WB-AMR Combinations into 25.993	RAN2, NSN	5	LS_in	= R2-072987, R1-073816	Revised
Yes	R1-073245	LS on HS-SCCH less + MIMO	RAN2, Qualcomm	5	LS_in	= R2-072999	Noted
Yes	R1-073246	Physical Layer Aspects of eMBMS Counting	RAN2, IPWireless	5	LS_in	= R2-073003	Noted
Yes	R1-073247	[DRAFT] LS on Complementary Time Domain Filter for Neighbour Cell Measurements	RAN4, Ericsson	5	LS_in	= R4-071119	Noted
Yes	R1-073248	Update on Relevant RAN5 Agreed CRs to TS 34.108	RAN5, NTT DoCoMo	5	LS_in	= R5-071545	Noted
Yes	R1-073249	TS 36.212 v1.3.1	Qualcomm Europe	7.1	TS	R1-073821	Revised
Yes	R1-073250	OS for DL RS	Qualcomm Europe	7.2.1	Discussion/Decision		Noted
No	R1-073251	Dedicated RS for FS1	Qualcomm Europe	7.2.1	Discussion/Decision		Missing
Yes	R1-073252	DL RS periodicity	Qualcomm Europe	7.2.1	Discussion/Decision		Noted
Yes	R1-073253	Details on UL DM RS	Qualcomm Europe	7.2.2	Discussion/Decision		Noted
Yes	R1-073254	SRS multiplexing structure	Qualcomm Europe	7.2.2	Discussion/Decision		Not treated
Yes	R1-073255	PDCCH structure	Qualcomm Europe	7.2.3	Discussion/Decision		Not treated
Yes	R1-073256	Subband based allocation for PDSCH	Qualcomm Europe	7.2.3	Discussion/Decision		Not treated
Yes	R1-073257	PDCCH format for transmission of TPC commands	Qualcomm Europe	7.2.3	Discussion/Decision		Not treated
Yes	R1-073258	PHICH structure and multiplexing	Qualcomm Europe	7.2.3	Discussion/Decision		Not treated
Yes	R1-073259	Details on CQI format	Qualcomm Europe	7.2.4	Discussion/Decision		Not treated
Yes	R1-073260	Joint coding of CQI and ACK	Qualcomm Europe	7.2.4	Discussion/Decision		Not treated
Yes	R1-073261	Support of ACK repetition in the UL of E-UTRA	Qualcomm Europe	7.2.4	Discussion/Decision		Not treated
Yes	R1-073262	Details on scheduling requests	Qualcomm Europe	7.2.4	Discussion/Decision		Not treated
Yes	R1-073263	UL control details for TDD	Qualcomm Europe	7.2.4	Discussion/Decision		Not treated
Yes	R1-073264	PUSCH and PUCCH hopping patterns	Qualcomm Europe	7.2.5	Discussion/Decision		Not treated
Yes	R1-073265	Pseudo-random hopping pattern for PDSCH	Qualcomm Europe	7.2.5	Discussion/Decision		Not treated
Yes	R1-073266	Calibration procedures for TDD beamforming	Qualcomm Europe	7.2.6	Discussion/Decision		Not treated
Yes	R1-073267	Scrambling of SSC	Qualcomm Europe	7.2.7	Discussion/Decision		Not treated
Yes	R1-073268	CRC for multiple code block transmissions	Qualcomm Europe	7.3	Discussion/Decision		Not treated

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Yes	R1-073269	Rate matching details for control and data multiplexing	Qualcomm Europe	7.3	Discussion/Decision		Not treated	
Yes	R1-073270	Number of HARQ processes	Qualcomm Europe	7.3	Discussion/Decision		Not treated	
No	R1-073271	UL power control details	Qualcomm Europe	7.4.2	Discussion/Decision		Missing	
Yes	R1-073272	Details on UL antenna switching	Qualcomm Europe	7.4.5	Discussion/Decision		Not treated	
Yes	R1-073273	D-BCH capacity	Qualcomm Europe	7	Information		Not treated	
Yes	R1-073274	Final details on CDD precoding	Qualcomm Europe	7.2.6	Discussion/Decision		Not treated	
Yes	R1-073275	Details for SSC specification	Qualcomm Europe	7.2.7	Discussion/Decision		Not treated	
Yes	R1-073276	Transmission of coded bits from circular buffer	Qualcomm Europe	7.3	Discussion/Decision		Not treated	
Yes	R1-073277	Transmission of coded blocks within the TTI	Qualcomm Europe	7.3	Discussion/Decision		Not treated	
Yes	R1-073278	On the size of the CCE	Qualcomm Europe	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073279	Dimensioning of TDD PHICH	IPWireless	7.2.3	Discussion		Not treated	
Yes	R1-073280	Dimensioning of TDD DL control signalling	IPWireless	7.2.3	Discussion		Not treated	
Yes	R1-073281	Frame configurations for TDD frame structure type 1	IPWireless	7.2	Decision		Not treated	
Yes	R1-073282	RACH for TDD frame structure type 1	IPWireless	7.2.9	Decision		Not treated	
Yes	R1-073283	TDD PUCCH	IPWireless	7.2.4	Discussion		Not treated	
No	R1-073284	Coding for TDD PUCCH	IPWireless	7.3	Discussion		Withdrawn	
Yes	R1-073285	Measurements for power control	IPWireless, Nextwave Wireless	7.5	Discussion		Noted	
Yes	R1-073286	TDD HARQ timing	IPWireless	7.3	Discussion		Not treated	
Yes	R1-073287	Liaison Statement to RAN1 on LTE Transmission of SU-1 of System Information	RAN2, Ericsson	5	LS_in	= R2-072926	Noted	
Yes	R1-073288	RS Structure Supporting Spatial Multiplexing for MBSFN	Nortel	7.2.1	Discussion/Decision		Not treated	
Yes	R1-073289	Discussion on the Dedicated Demodulation RS	Nortel	7.2.1	Discussion/Decision		Noted	
Yes	R1-073290	The Resource Element Mapping of PDCCH, PCFICH and PHICH	Nortel	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073291	Uplink Signaling Support for DL Rank Adaptation with Fixed Precoding	Nortel	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073292	Further Discussion on the Differential Feedback of PMI for LTE Downlink Closed-Loop MIMO	Nortel	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073293	Further Discussion on the Diversity VRB Mapping Schemes	Nortel	7.2.5	Discussion/Decision		Not treated	
Yes	R1-073294	RB Hopping for Uplink Data Transmission	Nortel	7.2.5	Discussion/Decision		Not treated	
Yes	R1-073295	Further Simulation Evaluation of 2x2 Pre-coding Gain	Nortel	7.2.6	Discussion		Not treated	
Yes	R1-073296	Discussion on Rank Adaptation Based on Shadowing for High Speed UEs	Nortel	7.2.6	Discussion/Decision		Not treated	
Yes	R1-073297	Rank Adaptation for Fixed Pre-coding	Nortel	7.2.6	Discussion/Decision		Not treated	
Yes	R1-073298	Further discussion on Spatial Multiplexing for MBSFN	Nortel	7.2.6	Discussion/Decision		Not treated	
Yes	R1-073299	Update on HARQ Performance Enhancement	Nortel	7.2.6	Discussion/Decision		Not treated	
Yes	R1-073300	Precoding Matrix Verification Based on Beacon RS in E-UTRA Downlink	Nortel	7.2.6	Discussion/Decision		Not treated	
Yes	R1-073301	UL MU-MIMO Performance Improvement for E-UTRA with SIC Receiver	Nortel	7.2.6	Discussion		Not treated	
Yes	R1-073302	Further Discussion on RE Mapping of SFBC+FSTD Based TxD for Shared Data Channel	Nortel	7.2.6	Discussion/Decision		Not treated	
Yes	R1-073303	RE Mapping of SFBC+FSTD Based TxD for PDCCH	Nortel	7.2.6	Discussion/Decision		Not treated	

Yes	R1-073304	Performance Evaluation of Rate-2 SFBC versus Fixed Precoding with and without Long-delay CDD	Nortel	7.2.6	Discussion/Decision		Not treated
Yes	R1-073305	Discussion on Beamforming	Nortel	7.2.6	Discussion/Decision		Not treated
Yes	R1-073306	Link Level Evaluation on Fixed Beamforming plus MIMO Precoding versus Adaptive Beamforming	Nortel	7.2.6	Discussion/Decision		Not treated
Yes	R1-073307	Scrambling Code Designs for SSCH	Nortel	7.2.7	Discussion/Decision		Not treated
Yes	R1-073308	Further Discussion on the Mapping of Short Sequences for S-SCH	Nortel	7.2.7	Discussion/Decision		Not treated
Yes	R1-073309	The Detection of the Antenna Configuration	Nortel	7.2.8	Discussion/Decision		Not treated
Yes	R1-073310	FEC Code Block-based CRC	Nortel	7.3	Discussion/Decision		Not treated
Yes	R1-073311	UL Power Control with Fractional Frequency Reuse for E-UTRA	Nortel	7.4.2	Discussion/Decision		Not treated
Yes	R1-073312	Discussion on the DL Interference Coordination	Nortel	7.4.3	Discussion/Decision		Not treated
Yes	R1-073313	Further Discussion on UL Closed-loop Adaptive Antenna Switching	Nortel	7.4.6	Discussion/Decision		Not treated
Yes	R1-073314	MCS Selection for LTE	Nortel	7.4.5	Information		Not treated
Yes	R1-073315	Uplink Reference Signal Sequence Design	Toshiba	7.2.2	Discussion/Decision		Not treated
Yes	R1-073316	CAZAC sequence for PUCCH	Toshiba	7.2.4	Discussion		Not treated
Yes	R1-073317	Pre-coding Codebook for EUTRA MIMO Downlink	Toshiba	7.2.6	Discussion		Not treated
Yes	R1-073318	DL Transmit Diversity with Spatial Multiplexing for 4 TX antennas	LSI Corporation	7.2.6	Discussion/Decision		Not treated
Yes	R1-073319	Summary Results on OZCL Sequences for UL RS for LTE	SHARP	7.2.2	Discussion/Decision		Noted
Yes	R1-073320	Adaptive Best-M Based Scheme for CQI Reporting in the LTE UL	SHARP	7.2.4	Discussion/Decision		Not treated
Yes	R1-073321	Improved Flexibility/Performance CQI+ACK/NACK coding in the E-UTRA uplink	SHARP	7.2.4	Discussion/Decision		Not treated
Yes	R1-073322	UL physical channel for CQI report	SHARP	7.2.4	Discussion/Decision		Not treated
Yes	R1-073323	Proposed Scrambling sequences for S-SCH with embedded frame timing derivation	SHARP	7.2.7	Discussion/Decision		Not treated
Yes	R1-073324	25211CR242 (Rel-7, F) "PICH associated HS-SCCH for Enhanced CELL_FACH"	Nokia Siemens Networks, Nokia	6	CR	R1-073825	Revised
Yes	R1-073325	25211CR243 "Clarification for CPC feature"	Nokia Siemens Networks, Nokia	6	CR		Agreed
Yes	R1-073326	16QAM modulation selection algorithm for HSUPA	Nokia Siemens Networks, Nokia	6	Discussion		Noted
Yes	R1-073327	25212CR252 "16QAM modulation selection for HSUPA"	Nokia Siemens Networks, Nokia	6	CR		Agreed
Yes	R1-073328	25214CR452 "CPC preamble and postamble clarification for CQI transmission"	Nokia Siemens Networks, Nokia	6	CR	R1-073828	Revised
Yes	R1-073329	25214CR453 "Removal of Inactivity_Threshold_for_UE_Grant_Monitoring definition"	Nokia Siemens Networks, Nokia	6	CR		Agreed
Yes	R1-073330	25214CR454 "Corrections to HS-DSCH procedures for CELL_FACH and MIMO"	Nokia Siemens Networks, Nokia	6	CR	R1-073829	Revised
No	R1-073331	25214CR455 "CPC PC clarification"	Nokia Siemens Networks, Nokia	6	CR		Withdrawn
Yes	R1-073332	Rel-7 E-DPDCH gain factor calculation	Nokia, Nokia Siemens Networks	6	Discussion		Noted
Yes	R1-073333	25214CR456 "Correction to Rel-7 E-DPDCH gain factor calculation"	Nokia, Nokia Siemens Networks	6	CR	R1-073831	Revised
Yes	R1-073334	Update to 64QAM CQI tables	Nokia, Nokia Siemens Networks	6	Discussion		Noted

Yes	R1-073335	25214CR457 "Clarification to applicability of CQI tables in Rel. 7"	Nokia, Nokia Siemens Networks	6	CR		Noted
Yes	R1-073336	25.211CR245 Clarifications on the use of S-CCPCH pilot bits for MBSFN FDD feature	Ericsson	6	CR		Agreed
Yes	R1-073337	25.212CR253 Clarifications of MIMO	Ericsson	6	CR		Agreed
Yes	R1-073338	25.214CR458 "Clarifications of MIMO and 64QAM"	Ericsson	6	CR	R1-073832	Revised
Yes	R1-073339	25.212CR254 "Clarifications of CPC and MIMO"	Ericsson	6	CR		Agreed
Yes	R1-073340	25.214CR459 Clarifications of CPC	Ericsson	6	CR		Agreed
Yes	R1-073341	25215 CR176 "Adding GANSS related measurements in the FDD physical layer measurements"	Alcatel-Lucent, Orange	6	CR	R1-073814	Revised
Yes	R1-073342	25211CR246 (Rel-7,) "Clarification on MICH"	Alcatel-Lucent	6	CR	R1-073826	Revised
Yes	R1-073343	25.211 CR0232r3 (Rel-7, C) "Enhanced F-DPCH"	Qualcomm Europe	6	CR		Agreed
Yes	R1-073344	25.212 CR255 (Rel-7, F) "RM1 transparent for HS-SCCH-less operation"	Qualcomm Europe	6	CR		Noted
Yes	R1-073345	25.214 CR460 (Rel-7, F) "E-DPDCH scaling when UE is at max power"	Qualcomm Europe	6	CR	R1-073862	Revised
Yes	R1-073346	25.213 CR090 (Rel-7, D) "Editorial changes in 25.213 for 16QAM specification"	Qualcomm Europe	6	CR		Agreed
Yes	R1-073347	Impact of 64QAM+MIMO HSDPA operation in the DL	Qualcomm Europe, Ericsson	8	Discussion		Noted
Yes	R1-073348	Impact of 64QAM+MIMO HSDPA operation in the UL	Qualcomm Europe, Ericsson	8	Discussion		Noted
No	R1-073349	Overhead Analysis for PMI Downlink Signaling Using Single Bit PMI Indicator	InterDigital Communications LLC	7.2.3	Discussion		Missing
Yes	R1-073350	Performance Comparison of Distributed-Haar Based Compression for CQI Feedback in E-UTRA	InterDigital Communications LLC	7.2.4	Discussion		Not treated
Yes	R1-073351	Performance Comparison of Full Band CQI Reporting Using Haar Compression for E-UTRA	InterDigital Communications LLC	7.2.4	Discussion		Not treated
Yes	R1-073352	Binary Differential Feedback Using Existing Codebooks for E-UTRA	InterDigital Communications LLC	7.2.6	Discussion		Not treated
Yes	R1-073353	MU-MIMO Codebook Subset Selection and Signaling Considerations for E-UTRA	InterDigital Communications LLC	7.2.6	Discussion		Not treated
Yes	R1-073354	P-BCH TTI Boundry Detection using BPSK coding on S-SCH	InterDigital Communications LLC	7.2.7	Discussion		Not treated
Yes	R1-073355	E-UTRA Power control simulation results for various feedback approaches	InterDigital Communications LLC	7.4.2	Discussion		Noted
Yes	R1-073356	UL Sounding RS Protocol Design for Antenna Selection	Mitsubishi Electric	7.2.2	Discussion/Decision		Not treated
Yes	R1-073357	Antenna Selection with a Frequency-Hopped or Variable Bandwidth Sounding Reference Signal	Mitsubishi Electric	7.4.6	Discussion		Not treated
Yes	R1-073358	Update of 36.213 Physical Layer Procedure for E-UTRA	Motorola	7.1	TS	R1-073824	Revised
Yes	R1-073359	On supporting 1st stage turbo code rate matching	Motorola	7.3	Discussion/Decision		Not treated
Yes	R1-073360	Convolutional code rate matching in LTE	Motorola	7.3	Discussion/Decision		Not treated
Yes	R1-073361	Uplink channel interleaving	Motorola	7.3	Discussion/Decision		Noted
Yes	R1-073362	Downlink channel interleaving	Motorola	7.3	Discussion/Decision		Not treated
Yes	R1-073363	RE sizing for turbo code block segments	Motorola	7.3	Discussion/Decision		Not treated
Yes	R1-073364	Soft Buffer size per HARQ Process	Motorola	7.3	Discussion/Decision		Not treated
Yes	R1-073365	UE Capability	Motorola	7.3	Discussion/Decision		Not treated
Yes	R1-073366	HARQ timing	Motorola	7.3	Discussion/Decision		Not treated
No	R1-073367	eNode-B Measurements	Motorola	7.5	Discussion/Decision		Missing

Yes	R1-073368	UE Tx Power (PSD) Measurement and Reporting	Motorola	7.5	Discussion/Decision		Noted
Yes	R1-073369	Downlink Acknowledgement Mapping to RE's	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073370	Support of Precoding for E-UTRA DL L1/L2 Control Channel	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073371	E-UTRA Coverage	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073372	Downlink Resource Allocation Mapping for E-UTRA	Motorola	7.2.3	Discussion/Decision		Noted
Yes	R1-073373	Search Space definition for L1/L2 Control Channels	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073374	PDCCH Channel Estimation System impact (1 vs 2 DRS) on System Performance	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073375	E-UTRA Downlink L1/L2 Control Channel Configurations	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073376	E-UTRA Downlink L1/L2 Control Channel Design - PICH/AICH/DBCH	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073377	Efficient Structure for Aggregating 12[3]48 Downlink Control Channel Elements	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073378	PMI Downlink Signaling & PDCCH format	Motorola	7.2.3	Discussion/Decision		Not treated
Yes	R1-073379	UL ACK/NACK Resource Provisioning	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073380	UL ACK/NACK Implicit Mapping	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073381	UL ACK/NACK for TDD	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073382	Scheduling Request Mechanism for EUTRA Uplink	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073383	Joint feedback for E-UTRA downlink precoding and CQI	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073384	CQI Feedback Schemes for E-UTRA	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073385	CQI Coding Schemes	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073386	Uplink transmission of CQI and Ack/Nack	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073387	Performance of CQI Feedback Schemes	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073388	UL L1/L2 control signals with data Multiplexing Details	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073389	PDCCH Downlink Format for (MIMO) precoding and non-precoding modes	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073390	PDCCH UL format	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073391	Persistent Scheduling of PUCCH resources	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073392	E-UTRA DL Distributed Transmission Mapping rules and Performance	Motorola	7.2.5	Discussion/Decision		Noted
Yes	R1-073393	DL distributed transmission summary	Motorola	7.2.5	Discussion/Decision		Noted
Yes	R1-073394	UL Resource Allocation for Frequency-diverse (hopping) Allocations	Motorola	7.2.5	Discussion/Decision		Not treated
Yes	R1-073395	Beamforming for E-UTRA	Motorola	7.2.6	Discussion/Decision		Not treated
Yes	R1-073396	MU-MIMO for E-UTRA	Motorola	7.2.6	Discussion/Decision		Not treated
Yes	R1-073397	Requirement for DL PMI Signaling	Motorola	7.2.6	Discussion/Decision		Not treated
Yes	R1-073398	MBSFN Performance with SFBC and Spatial Multiplexing	Motorola	7.2.6	Discussion		Not treated

Yes	R1-073399	MIMO RS Structure for Unicast/MBMS-Mixed Scenarios	Motorola	7.2.1	Discussion/Decision		Not treated	
No	R1-073400	MU-MIMO Performance under agreed simulation conditions	Motorola	7.2.6	Discussion/Decision		Withdrawn	
Yes	R1-073401	Cell Search E-mail Reflector Summary	Motorola	7.2.7	Discussion/Decision		Not treated	
Yes	R1-073402	BCH/SCH transmission for odd number of RB	Motorola	7.2.8	Discussion/Decision		Not treated	
Yes	R1-073403	RACH Slot Configurations	Motorola	7.2.9	Discussion/Decision		Not treated	
Yes	R1-073404	Random Access E-mail Reflector Summary	Motorola	7.2.9	Discussion/Decision		Noted	
Yes	R1-073405	Sounding Reference Signal Power Setting	Motorola	7.4.2	Discussion/Decision		Not treated	
Yes	R1-073406	Power Control Errors and Uplink Frequency Domain Scheduling	Motorola	7.4.2	Discussion/Decision		Not treated	
Yes	R1-073407	UE Transmit Power Accuracy and Calibration	Motorola	7.4.2	Discussion/Decision	R1-073837	Revised	
Yes	R1-073408	Uplink Inter-Cell Power Control: X2 Messages	Motorola	7.4.3	Discussion/Decision		Not treated	
Yes	R1-073409	MU-MIMO PHICH Assignment for Adaptive and non-Adaptive HARQ	Motorola	7.4.6	Discussion/Decision		Not treated	
Yes	R1-073410	On Rate Matching parameters for TS 36.212	Broadcom	7.3	Discussion/Decision		Not treated	
Yes	R1-073411	Text change Proposal for Rate Matching in TS 36.212	Broadcom	7.3	Discussion/Decision		Not treated	
Yes	R1-073412	Randomization of intr-cell interference in PUCCH	ETRI	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073413	Sequence allocation and hopping for uplink ACK/NAK channels	ETRI	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073414	S-SCH scrambling and mepping methods	ETRI	7.2.7	Discussion/Decision	R1-073798	Revised	
No	R1-073415	Performance of LTE DL multi-user MIMO	Freescale Semiconductor	7.2.6	Discussion		Missing	
Yes	R1-073416	Resource Allocation and Indication for LTE	Sunplus mMobile Inc.	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073417	Orthogonal RS for Different MBSFN Zones in E-UTRA	Texas Instruments	7.2.1	Discussion/Decision		Noted	
Yes	R1-073418	Interference between Sounding Reference Signal and Random Access Preamble	Texas Instruments	7.2.2	Discussion/Decision		Not treated	
Yes	R1-073419	Uplink Reference Signal Sequence Assignments in E-UTRA	Texas Instruments	7.2.2	Discussion/Decision		Not treated	
Yes	R1-073420	Uplink Reference Signals in Support of Requirements for High-Speed UEs	Texas Instruments	7.2.2	Discussion/Decision		Not treated	
Yes	R1-073421	Choice of CRC Length To Reduce False PDCCH Detection	Texas Instruments	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073422	Preamble Based Scheduling Request for E-UTRA	Texas Instruments	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073423	Design Aspects of UE Feedback	Texas Instruments	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073424	Rank and PMI Feedback Rate – Analysis	Texas Instruments	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073425	Rank Feedback Rate – System Simulation	Texas Instruments	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073426	PMI Feedback Rate – System Simulation	Texas Instruments	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073427	Frequency Granularity of MIMO Pre-coding for E-UTRA	Texas Instruments	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073428	CQI Feedback Reduction Scheme for E-UTRA	Texas Instruments	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073429	Coherent Uplink ACK/NAK Transmission with High Speed UEs	Texas Instruments	7.2.4	Discussion/Decision		Not treated	

Yes	R1-073430	Simultaneous ACK/NAK and SR Transmission in Uplink	Texas Instruments	7.2.4	Discussion/Decision		Not treated		
Yes	R1-073431	Simultaneous CQI and ACK/NAK Transmission in Uplink	Texas Instruments	7.2.4	Discussion/Decision		Not treated		
Yes	R1-073432	Uplink ACK/NAK Transmission for Persistently Scheduled Downlink Packets	Texas Instruments	7.2.4	Discussion/Decision		Not treated		
Yes	R1-073433	Remaining Details on SU-MIMO for E-UTRA	Texas Instruments	7.2.6	Discussion/Decision	R1-073845	Revised		
Yes	R1-073434	Secondary SCH Mapping and Scrambling	Texas Instruments	7.2.7	Discussion/Decision		Not treated		
Yes	R1-073435	Random Access Preamble L1 Parameters in E-UTRA	Texas Instruments	7.2.9	Discussion/Decision		Not treated		
Yes	R1-073436	Random Access Slot Configurations	Texas Instruments	7.2.9	Discussion/Decision		Not treated		
Yes	R1-073437	25214 CR461 (Rel-7, F) "Power setting for HS-DPCCH in MIMO mode"	LG Electronics	6	CR		Withdrawn		
Yes	R1-073438	Summary of the e-mail discussion on channel coding	NTT DoCoMo	7.3	Discussion/Decision	R1-073833	Revised		
Yes	R1-073439	UE categories	NTT DoCoMo	7	Discussion/Decision		Noted		
Yes	R1-073440	Selection of CQI reporting scheme	Mitsubishi Electric	7.4.5	Discussion/Decision		Not treated		
Yes	R1-073441	UE and CCE specific scrambling codes for low complexity blind detection of downlink control signaling	Mitsubishi Electric	7.2.3	Discussion/Decision		Not treated		
Yes	R1-073442	Resource block mapping for EUTRA downlink distributed transmissions	Mitsubishi Electric	7.2.5	Discussion/Decision		Not treated		
Yes	R1-073443	25221 CR144 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	6	CR		Technically endorsed		
Yes	R1-073444	25222 CR136 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	6	CR		Technically endorsed		
Yes	R1-073445	25223 CR046 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	6	CR	R1-073839	Revised		
Yes	R1-073446	25224 CR163 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	6	CR	R1-073840	Revised		
Yes	R1-073447	25225 CR088 "Introduction of multi-frequency operation for 1.28Mcps TDD"	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	6	CR		Technically endorsed		
Yes	R1-073448	Introduce TD-SCDMA industry standard in CCSA to 3GPP	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	6	Discussion	R1-073807	Revised		
Yes	R1-073449	25224 CR164 "Improvement on the power control of E-PUCH in 1.28Mcps TDD"	ZTE	6	CR	R1-073808	Revised		
Yes	R1-073450	25201 CR035 (Rel-7, F) "Minor modification related to EDCH in 1.28Mcps TDD"	ZTE, CATT, TD-TECH, Spreadtrum Communications	6	CR	R1-073830	Revised		
Yes	R1-073451	Consideration on resource indication in LTE TDD	ZTE	7.2.3	Discussion/Decision		Not treated		
Yes	R1-073452	Control channel format for DBCH, PCH and RACH response	NEC, Nokia, Nokia Siemens Networks, Motorola	7.2.3	Discussion/Decision		Not treated		

Yes	R1-073453	Assignment of Base Sequence Group for UL DM RS	NEC Group	7.2.2	Discussion/Decision		Not treated
Yes	R1-073454	Chicken and Egg issue for DL L1/L2 control	NEC Group	7.2.3	Discussion/Decision		Not treated
Yes	R1-073455	Low overhead PDCCH format for BCCH, PCH, RACH response transmission on DL-SCH	NEC Group	7.2.3	Discussion/Decision		Not treated
Yes	R1-073456	DL Control Channel Structure: CCE Aggregation and Blind Detections	NEC Group	7.2.3	Discussion/Decision		Not treated
Yes	R1-073457	Uplink Resource Allocation for E-UTRA	NEC Group	7.2.3	Discussion/Decision		Not treated
Yes	R1-073458	DL Unicast Resource Allocation Signalling using L1L2 control channels	NEC Group	7.2.3	Discussion/Decision	R1-073795	Revised
Yes	R1-073459	Downlink ACK/NACK signalling for E-UTRA	NEC Group	7.2.3	Discussion/Decision		Not treated
Yes	R1-073460	DL Multiplexing for Persistent and Dynamic scheduling	NEC Group	7.2.3	Discussion/Decision		Not treated
Yes	R1-073461	CQI + ACK/NACK transmission in PUCCH	NEC Group	7.2.4	Discussion/Decision		Not treated
Yes	R1-073462	PUCCH allocation for ACK/NACK transmission	NEC Group	7.2.4	Discussion/Decision		Not treated
Yes	R1-073463	Multiplexing of uplink data-non-associated control signal with data	NEC Group	7.2.4	Discussion/Decision		Not treated
Yes	R1-073464	Detail of ACK/NACK and CQI transmission without data transmission	NEC Group	7.2.4	Discussion/Decision		Not treated
Yes	R1-073465	Way Forward for Uplink Blind Decoding	NEC Group	7.2.4	Discussion and Approval		Not treated
Yes	R1-073466	Cell-specific Resource Block Mapping for Downlink Distributed Transmission	NEC Group	7.2.5	Discussion/Decision		Not treated
Yes	R1-073467	DL Distributed Resource Signalling for EUTRA	NEC Group	7.2.5	Discussion/Decision		Not treated
Yes	R1-073468	Frequency Hopping Pattern for EUTRA Uplink	NEC Group	7.2.5	Discussion/Decision		Not treated
Yes	R1-073469	S-SCH and Scrambling Codes	NEC Group	7.2.7	Discussion/Decision		Not treated
Yes	R1-073470	Adoption of 2-stage Rate Matching and modified IR-HARQ	Fujitsu	7.3	Discussion/Decision		Not treated
Yes	R1-073471	Improved E-HICH signature allocation for LCR-TDD	Spreadtrum Communications	6	Information	R1-073796	Revised
Yes	R1-073472	25222 CR138 (Rel-7, C) "Improved E-HICH signature allocation method for LCR-TDD"	Spreadtrum Communications	6	CR	R1-073797	Revised
Yes	R1-073473	Multiplexing of PUCCH and Sounding RS	Fujitsu	7.2.4	Discussion/Decision		Not treated
Yes	R1-073474	UL sounding RS operation	LG Electronics	7.2.2	Discussion/Decision		Not treated
Yes	R1-073475	UL RS binding method with larger base RB sequences	LG Electronics	7.2.2	Discussion/Decision		Not treated
Yes	R1-073476	PHICH duration and signaling	LG Electronics	7.2.3	Discussion/Decision		Not treated
Yes	R1-073477	DL PDCCH/PCFICH/RS transmission in MBSFN subframe	LG Electronics	7.2.3	Discussion/Decision		Not treated
Yes	R1-073478	RB-group based DL LVRB allocation	LG Electronics	7.2.3	Discussion/Decision		Not treated
Yes	R1-073479	Mapping Relations between UL VRB and DL ACK/NACK	LG Electronics	7.2.3	Discussion/Decision		Not treated
Yes	R1-073480	Downlink PHICH structure	LG Electronics	7.2.3	Discussion/Decision		Not treated
Yes	R1-073481	Scheduling restriction according to UL/DL subframe ratio in TDD	LG Electronics	7.2.3	Discussion/Decision		Not treated
Yes	R1-073482	Considerations on PDCCH design for SU-MIMO	LG Electronics	7.2.3	Dicussion		Not treated

Yes	R1-073483	Interleaver design for CCE-to-RE mapping	LG Electronics	7.2.3	Discussion/Decision		Not treated
Yes	R1-073484	On the consideration of DL L1/L2 control channel design for MIMO	LG Electronics	7.2.3	Discussion		Not treated
Yes	R1-073485	Proposed Scheduling Request (SR) structure and multiplexing with PUCCH	LG Electronics	7.2.4	Discussion/Decision		Not treated
Yes	R1-073486	Erroneous operation handling caused by DL/UL control channel failure	LG Electronics	7.2.4	Discussion/Decision		Not treated
Yes	R1-073487	Proposed PUCCH slot format considering sounding RS transmission	LG Electronics	7.2.4	Discussion/Decision	R1-073834	Revised
Yes	R1-073488	Mapping Relations between DL CCE and UL ACK/NACK	LG Electronics	7.2.4	Discussion/Decision		Not treated
Yes	R1-073489	Delta CQI in spatial domain for SU-MIMO	LG Electronics	7.2.4	Discussion/Decision		Not treated
Yes	R1-073490	Separate transmission of CQI values and indexes considering reporting period	LG Electronics	7.2.4	Discussion/Decision		Not treated
Yes	R1-073491	Frequency granularity of CQI and PMI feedback	LG Electronics	7.2.4	Discussion		Not treated
Yes	R1-073492	Two alternative approaches for UL frequency hopping	LG Electronics	7.2.5	Discussion/Decision		Not treated
Yes	R1-073493	Further Consideration on RE Mapping for 4Tx PDSCH	LG Electronics	7.2.6	Discussion/Decision		Not treated
Yes	R1-073494	Further Consideration on CDD-based Precoding	LG Electronics	7.2.6	Discussion/Decision		Not treated
Yes	R1-073495	CDD-based Precoding for Open-loop SM in E-UTRA downlink	LG Electronics	7.2.6	Discussion/Decision		Not treated
Yes	R1-073496	SSC mapping and scrambling method	LG Electronics	7.2.7	Discussion/Decision		Not treated
Yes	R1-073497	Flexibility of detecting 40ms P-BCH boundary	LG Electronics	7.2.7	Discussion/Decision		Not treated
Yes	R1-073498	Cyclic Shift Configuration Set for Non-Synchronized RACH	LG Electronics	7.2.9	Discussion/Decision		Not treated
Yes	R1-073499	Additional Burst Types for Non-Synchronized RACH	LG Electronics	7.2.9	Discussion/Decision		Not treated
No	R1-073500	Preamble Indication for Non-Synchronized RACH	LG Electronics	7.2.9	Discussion/Decision		Missing
Yes	R1-073501	Preamble Index Mapping for Non-Synchronized RACH	LG Electronics	7.2.9	Discussion/Decision		Not treated
Yes	R1-073502	Comparison of Formula for Restricted Cyclic shift Set	LG Electronics, Nokia, Nokia Siemens Networks	7.2.9	Discussion/Decision		Not treated
Yes	R1-073503	Spatial mapping of code blocks for 4 TX SU-MIMO	LG Electronics	7.3	Discussion/Decision		Not treated
Yes	R1-073504	On the consideration of CRC attachment	LG Electronics	7.3	Discussion/Decision		Not treated
Yes	R1-073505	DL RE puncturing for DL RS/PSC/SSC TxP boosting	LG Electronics	7.4.2	Discussion/Decision		Not treated
Yes	R1-073506	Intra-cell power control for uplink in E-UTRA	LG Electronics	7.4.2	Discussion/Decision		Not treated
Yes	R1-073507	UL synchronous HARQ procedure and UE behaviour after ACK/NACK detection	LG Electronics	7.4.6	Discussion/Decision		Not treated
No	R1-073508	Specification of cell-specific DL RS FH sequences	Huawei	7.2.1	Discussion/Decision		Withdrawn
Yes	R1-073509	Throughput evaluation with cell-specific frequency-hopped/shifted DL RS using realistic DL CQI estimation/adaptive adjustment	Huawei	7.2.1	Discussion/Decision		Not treated
Yes	R1-073510	CCE to RE interleaver design criteria	Huawei	7.2.3	Discussion/Decision		Not treated
Yes	R1-073511	DL control signaling to support MIMO	Huawei	7.2.3	Discussion		Not treated
Yes	R1-073512	Feedback method for CQI, PMI and rank	Huawei	7.2.4	Discussion/Decision		Not treated
Yes	R1-073513	Cell-specific mapping of distributed virtual resource blocks	Huawei	7.2.5	Discussion/Decision		Not treated

Yes	R1-073514	Scrambling and information encoding for the S-SCH	Huawei	7.2.7	Discussion/Decision		Not treated	
Yes	R1-073515	Multiple values of cyclic shift increment NCS	Huawei	7.2.9	Discussion/Decision		Not treated	
Yes	R1-073516	Specification of restricted set of cyclic shifts of root Zadoff-Chu sequences	Huawei, Panasonic	7.2.9	Discussion/Decision		Not treated	
Yes	R1-073517	Uplink Sounding Reference Signal in E-UTRA	Huawei	7.2.2	Discussion/Decision		Not treated	
Yes	R1-073518	Sequence grouping rule for UL DM RS	Huawei	7.2.2	Discussion/Decision		Not treated	
Yes	R1-073519	MBSFN impact on paging transmission	Huawei	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073520	Subframe index in UL schedule grant for TDD FS Type 2	Huawei	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073521	Multiplexing of Scheduling Request Indicator	Huawei	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073522	Code Allocation for UL ACK/NACK Channels	Huawei	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073523	TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN	CATT	6	Aprroval		Noted	
Yes	R1-073524	25221 CR145 (Rel-7, F) "TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN"	CATT	6	CR		Agreed	
Yes	R1-073525	25222 CR137 (Rel-7, F) "TFCI mapping for S-CCPCH and 16QAM for 1.28 Mcps TDD MBSFN"	CATT	6	CR		Agreed	
Yes	R1-073526	Downlink Dedicated Reference Symbols Structure for TDD with Frame Structure Type 2	CATT	7.2.1	Discussion/Decision		Noted	
Yes	R1-073527	CCFI for LTE TDD	CATT	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073528	Timing relationship between the DL control signaling and associated sub-frames for TDD	CATT	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073529	PUCCH channel structure for TDD with FS2	CATT, Huawei	7.2.4	Discussion/Decision		Noted	
Yes	R1-073530	PUCCH formats for ACK/NACK and CQI transmission for TDD with FS2	CATT, Huawei	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073531	Timing relationship between the UL ACK/NACK and DL sub-frames for TDD	CATT	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073532	Uplink ACK/NACK transmission for LTE TDD	CATT	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073533	HARQ RTT and Process Number in TDD	CATT	7.3	Discussion/Decision		Not treated	
Yes	R1-073534	Random access preamble structure for LTE TDD frame structure type 2	CATT	7.2.9	Discussion/Decision		Noted	
Yes	R1-073535	Comparison of Downlink Resource Allocation Indication Schemes	Samsung	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073536	Configuration of PDCCH Monitoring Set	Samsung	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073537	UL LFDMA with hopping	Samsung	7.2.5	Discussion/Decision		Not treated	
Yes	R1-073538	DL ACK/NACK transmission for 1 transmit antenna	Samsung	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073539	Radio link monitoring for E-UTRA	Samsung	7.4.1	Discussion/Decision		Not treated	
Yes	R1-073540	Simultaneous UE transmission of ACK/NAK and CQI	Samsung	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073541	UL ACK/NACK channel structure	Samsung	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073542	UL ACK/NACK resource indication for supporting persistent scheduling	Samsung	7.2.4	Discussion/Decision		Not treated	
No	R1-073543	PUCCH channel coding: block coding vs convolutional coding	Samsung	7.3	Discussion/Decision		Missing	
Yes	R1-073544	Control signaling transmission format in presence of data in E-UTRA UL	Samsung	7.2.4	Discussion/Decision		Not treated	

Yes	R1-073545	CQI report transmission using PUSCH resource	Samsung	7.2.4	Discussion/Decision		Not treated
Yes	R1-073546	RB-wise regrouping of UL control	Samsung	7.2.4	Discussion/Decision		Not treated
Yes	R1-073547	DL CCFI to RE mapping	Samsung	7.2.3	Discussion/Decision		Not treated
Yes	R1-073548	HARQ redundant symbol selection for synchronous HARQ	Samsung	7.3	Discussion/Decision		Not treated
Yes	R1-073549	HARQ symbol to RE mapping	Samsung	7.3	Discussion/Decision		Not treated
Yes	R1-073550	System Performance for 2 Tx antenna MU-MIMO	Samsung	7.2.6	Discussion/Decision		Not treated
Yes	R1-073551	Refinement of 2 Tx antenna precoding codebook	Samsung	7.2.6	Discussion/Decision		Noted
Yes	R1-073552	Cyclic Shift Restrictions for RACH in Small, Medium and Large Cells	Samsung	7.2.9	Discussion/Decision		Not treated
Yes	R1-073553	Determination of the Cyclic Shift Amount, Ncs	Samsung	7.2.9	Discussion/Decision		Not treated
Yes	R1-073554	Performance of orthogonal Hybrid ARQ for multi-user MIMO in E-UTRA uplink	Samsung	7.2.6	Discussion/Decision		Not treated
Yes	R1-073555	Performance of single CQI feedback for 2CW SU-MIMO	Samsung	7.2.4	Discussion/Decision		Not treated
Yes	R1-073556	Downlink Link Adaptation and Related Control Signaling	Samsung	7.2.3	Discussion/Decision		Not treated
Yes	R1-073557	Power Scaling and DL RS boosting in a Multi-antenna System	Samsung	7.2.1	Discussion/Decision		Not treated
Yes	R1-073558	Code block CRC for DL-SCH and UL-SCH	Samsung	7.3	Discussion/Decision		Not treated
Yes	R1-073559	Downlink signaling for support of single-user MIMO	Samsung	7.2.3	Discussion/Decision		Not treated
Yes	R1-073560	Downlink hybrid ARQ signaling	Samsung	7.2.3	Discussion/Decision		Not treated
Yes	R1-073561	LTE downlink ACK channel mapping to CCE	Samsung	7.2.3	Discussion/Decision		Not treated
Yes	R1-073562	LTE uplink CQI report format	Samsung	7.2.4	Discussion/Decision		Not treated
Yes	R1-073563	Redundancy version definition for DL-SCH	Samsung	7.3	Discussion/Decision		Not treated
Yes	R1-073564	Selection of Orthogonal Cover and Cyclic Shift for High Speed UL ACK Channels	Samsung	7.2.4	Discussion/Decision		Not treated
Yes	R1-073565	Downlink ACK/NACK Transmit Diversity	Samsung	7.2.3	Discussion/Decision		Not treated
Yes	R1-073566	Further Considerations of CDD Precoding for High-speed UEs	Samsung	7.2.6	Discussion/Decision		Not treated
Yes	R1-073567	Improving cell-edge performance by Inter-Cell Interference Coordination	Samsung	7.4.3	Discussion/Decision		Not treated
Yes	R1-073568	Summary of Reflector Discussions on EUTRA DL RS	Samsung	7.2.1	Discussion		Noted
Yes	R1-073569	Summary of Reflector Discussions on EUTRA UL RS	Samsung	7.2.2	Discussion		Noted
Yes	R1-073570	Sounding RS Multiplexing in E-UTRA UL – Interaction with PUCCH	Samsung	7.2.2	Discussion/Decision		Not treated
Yes	R1-073571	PUCCH Transmission without Data in E-UTRA	Samsung	7.2.4	Discussion/Decision		Not treated
Yes	R1-073572	Control Signaling Location in Presence of Data in E-UTRA UL	Samsung	7.2.4	Discussion/Decision		Not treated
Yes	R1-073573	Tradeoffs of Additional RS in the PDCCH Region	Samsung	7.2.1	Discussion/Decision		Not treated
Yes	R1-073574	Distributed PDSCH Transmission in E-UTRA	Samsung	7.2.5	Discussion/Decision		Noted
Yes	R1-073575	UL Grant Size in E-UTRA	Samsung	7.2.3	Discussion/Decision		Not treated

Yes	R1-073576	VoIP Link Adaptation Using DM RS in E-UTRA Uplink	Samsung	7.4.2	Discussion/Decision		Not treated	
Yes	R1-073577	Implicit ACK/NAK Multiplexing in PUCCH CQI Sub-Frame Structure	Samsung	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073578	Uplink time domain hopping for E-UTRA TDD	Samsung	7.2.5	Discussion/Decision		Not treated	
Yes	R1-073579	Code block reordering in HARQ retransmissions	Samsung	7.3	Discussion/Decision		Not treated	
Yes	R1-073580	Downlink reference signal structure for TDD frame structure type 2	Samsung	7.2.1	Discussion/Decision		Not treated	
Yes	R1-073581	Implicit mapping of CCE to UL ACK/NACK resource	Samsung	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073582	Modulation mapping information	ZTE	8	Discussion & Dicision		Noted	
Yes	R1-073583	Combination of uplink semi-persistent schedule and frequency hopping	ZTE	7.2.5	Discussion		Not treated	
Yes	R1-073584	Dedicated Beam-forming supported in E-UTRA DL	ZTE	7.2.6	Discussion		Noted	
Yes	R1-073585	UL resource allocation based on DFT precoder comlexity reduction	ZTE	7.2.3	Discussion		Noted	
Yes	R1-073586	DL resource allocation and related signalling way	ZTE	7.2.3	Discussion		Not treated	
Yes	R1-073587	ACK/NACK transmission in E-UTRA downlink	ZTE	7.2.3	Discussion		Not treated	
Yes	R1-073588	Distributed Transmission in E-UTRA Downlink	ZTE	7.2.5	Discussion		Not treated	
Yes	R1-073589	Multiplexing of Sounding RS and PUCCH	ZTE	7.2.4	Discussion		Not treated	
Yes	R1-073590	System Information Mapping Scheme for S-SCH Sequences	ZTE	7.2.7	Discussion and decision		Not treated	
Yes	R1-073591	One Interleaved Multiplexing for S-SCH Sequences	ZTE	7.2.7	Discussion and decision		Not treated	
Yes	R1-073592	Optimization of Circular Buffer Rate Matching	ZTE	7.3	Discussion and decision		Withdrawn	
Yes	R1-073593	Bit priority mapping scheme	ZTE	7.3	Discussion and decision		Not treated	
No	R1-073594	Number of HARQ Processes	ZTE	7.3	Discussion and decision		Withdrawn	
Yes	R1-073595	Group-based Re-ordering Method of ZC Sequence in RACH	ZTE	7.2.9	Discussion		Not treated	
Yes	R1-073596	Uplink Inter-cell Power Control based on Overload Indicator and modified IoT measurement for E-UTRA	ZTE	7.4.2	Discussion		Not treated	
Yes	R1-073597	On UL scheduling grant	Fujitsu	7.2.3	Discussion		Not treated	
No	R1-073598	On data hopping in UL	Fujitsu	7.2.3	Discussion		Withdrawn	
Yes	R1-073599	Code mapping and scrambling for the SSCH	Marvell Semiconductor	7.2.7	Discussion		Not treated	
Yes	R1-073600	Enhanced UE DRX for HSPA Rel-8	Nokia Siemens Networks, Nokia	6	Discussion		Noted	
Yes	R1-073601	Distributed Virtual Resource Block Mapping for Persistent Resource Allocation as VoIP	Alcatel-Lucent	7.2.5	Discussion/Decision		Not treated	
Yes	R1-073602	Incremental CQI Feedback Scheme and Simulation Results	Alcatel-Lucent	7.2.4	Discussion		Not treated	
Yes	R1-073603	Signaling Resource Allocations in DL Control Channel	Alcatel-Lucent	7.2.3	Discussion		Not treated	
Yes	R1-073604	Semi-Static Interference Coordination Method	Alcatel-Lucent	7.4.3	Discussion		Not treated	
Yes	R1-073605	Support for Semi-Static Inter cell Interference Coordination	Alcatel-Lucent, Nortel Networks	7.4.3	Discussion/Decision		Not treated	
Yes	R1-073606	PDCCH payload formats and sizes	Panasonic	7.2.3	Discussion/Decision	R1-073810	Revised	
Yes	R1-073607	PDCCH signaling for retransmission of downlink persistent scheduling	Panasonic	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073608	CCE aggregation size and transport format signaling	Panasonic	7.2.3	Discussion/Decision		Not treated	

Yes	R1-073609	Semi-static, dynamic and hybrid CCE aggregation	Panasonic	7.2.3	Discussion/Decision		Not treated
Yes	R1-073610	Discussion on resource allocation and transport format signaling	Panasonic	7.2.3	Discussion		Not treated
Yes	R1-073611	Mapping of CCEs (control channel element) onto physical resource	Panasonic	7.2.3	Discussion/Decision		Not treated
Yes	R1-073612	Comparison between FDM and CDM+FDM for DL L1/L2 control channel multiplexing	Panasonic	7.2.3	Discussion/Decision		Not treated
Yes	R1-073613	DL ACK/NACK modulation and UL HARQ behaviour	Panasonic	7.2.3	Discussion/Decision		Not treated
Yes	R1-073614	Assignment of Downlink ACK/NACK channel	Panasonic	7.2.3	Discussion/Decision		Not treated
Yes	R1-073615	Distributed channel mapping	Panasonic	7.2.5	Discussion/Decision		Noted
Yes	R1-073616	Signaling parameters for UL ACK/NACK resources	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073617	Ordering of the implicit resource allocation table for Uplink ACK/NACK	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073618	Usage of Cyclic Shifts and block-wise spreading codes for Uplink ACK/NACK	Panasonic, Texas Instruments	7.2.4	Discussion/Decision		Noted
Yes	R1-073619	Cell Specific Cyclic Shifts and block-wise spreading codes for Uplink ACK/NACK	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073620	Clarification of Implicit Resource Allocation of Uplink ACK/NACK Signal	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073621	Variable Phase Definition of the Reference Signal for CQI in PUCCH	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073622	RACH sequence allocation and indication to the cell	Panasonic	7.2.9	Discussion/Decision	R1-073836	Revised
Yes	R1-073623	RACH sequence allocation for efficient matched filter implementation	Panasonic	7.2.9	Discussion/Decision		Not treated
Yes	R1-073624	Limitation of RACH sequence allocation for high mobility cell	Panasonic	7.2.9	Discussion/Decision		Not treated
No	R1-073625	Remaining issues on random access	Panasonic	7.2.9	Discussion/Decision		Missing
Yes	R1-073626	Reference signal generation method for E-UTRA uplink	Panasonic	7.2.2	Discussion/Decision		Noted
Yes	R1-073627	Further consideration on uplink RS hopping and grouping	Panasonic	7.2.2	Discussion/Decision		Not treated
Yes	R1-073628	Frequency dependent PUSCH DM-RS generation method with considering eNB-specific allocation	Panasonic	7.2.2	Discussion/Decision		Not treated
Yes	R1-073629	Sounding RS multiplexing with RACH and PUCCH for E-UTRA uplink	Panasonic	7.2.2	Discussion/Decision		Not treated
Yes	R1-073630	Discussion on CQI Report Metric (SINR vs TBS)	Panasonic	7.2.4	Discussion		Not treated
Yes	R1-073631	DCT Partitioning for CQI Reporting	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073632	CQI quantization for SU-MIMO	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073633	Rank feedback in downlink MIMO	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073634	PUCCH modulation for multi sequence transmission	Panasonic	7.2.4	Discussion/Decision		Not treated
Yes	R1-073635	Control signaling aspects of MU-MIMO	Panasonic	7.2.6	Discussion/Decision		Not treated
Yes	R1-073636	Number of HARQ processes	Panasonic	7.3	Discussion/Decision		Not treated
Yes	R1-073637	TS 36.214 v1.1.1	Nokia	7.1	TS	R1-073819	Revised
Yes	R1-073638	DL UL allocation period of 20ms for EUTRA TDD Frame Structure Type 1	Nokia, Nokia Siemens Networks	7.2	Discussion/Decision	(R1-072992)	Not treated
Yes	R1-073639	DL UL allocation options for EUTRA TDD	Nokia, Nokia Siemens Networks	7.2	Discussion/Decision		Not treated

Yes	R1-073640	Timing Estimation with Orthogonal RS	Nokia, Nokia Siemens Networks	7.2.1	Discussion/Decision		Noted
Yes	R1-073641	UL sounding reference signal for EUTRA TDD	Nokia, Nokia Siemens Networks	7.2.2	Discussion/Decision		Not treated
Yes	R1-073642	UL sounding Arrangement	Nokia Siemens Networks, Nokia	7.2.2	Discussion/Decision		Noted
Yes	R1-073643	Symbol based cyclic shift hopping	Nokia Siemens Networks, Nokia	7.2.2	Discussion/Decision		Noted
Yes	R1-073644	Cyclic Shift Hopping and DM RS Signaling	Nokia Siemens Networks, Nokia	7.2.2	Discussion/Decision	(R1-072991)	Not treated
Yes	R1-073645	Downlink Control signaling considerations for EUTRA TDD	Nokia, Nokia Siemens Networks	7.2.3	Discussion/Decision		Not treated
Yes	R1-073646	Multi-TTI Uplink Grants for TDD (FS1+FS2)	Nokia, Nokia Siemens Networks	7.2.3	Discussion/Decision		Not treated
Yes	R1-073647	PDCCH UL and DL signaling entity payloads	Nokia, Nokia Siemens Networks	7.2.3	Discussion/Decision		Not treated
Yes	R1-073648	Signaling PCH, RACH response and dynamic BCH in L1/L2 control channel.	Nokia, Nokia Siemens Networks	7.2.3	Discussion/Decision		Not treated
Yes	R1-073649	Signalling and decoding of PRB allocations LTE downlink	Nokia, Nokia Siemens Networks	7.2.3	Discussion/Decision		Not treated
Yes	R1-073650	Discussion of short format DL allocation within UL grant	Nokia, Nokia Siemens Networks	7.2.3	Discussion/Decision		Not treated
Yes	R1-073651	CQI transmission in PUCCH for TDD FS2	Nokia, Nokia Siemens Networks	7.2.4	Discussion/Decision		Not treated
Yes	R1-073652	ACK/NACK transmission in PUCCH for TDD FS2	Nokia, Nokia Siemens Networks	7.2.4	Discussion/Decision		Noted
Yes	R1-073653	Detection and DTX Performance of CQI+ACK/NACK transmitted on PUCCH	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision		Not treated
Yes	R1-073654	Scheduling Request supporting High Doppler	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision		Not treated
Yes	R1-073655	UL/DL resource allocation signaling errors and their impact to UL multiplexing design	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision	(R1-073013)	Not treated
Yes	R1-073656	ACK/NACK transmission with UL data	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision	(R1-073014)	Not treated
Yes	R1-073657	ACK/NACK modulation with UL data	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision	(R1-073015)	Not treated
Yes	R1-073658	Increasing the size of CQI by means of enhanced sequence modulation	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision	(R1-073000)	Noted
Yes	R1-073659	PUCCH sequence modulation sequences	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision	(R1-073001)	Not treated
Yes	R1-073660	On CQI coding in PUCCH	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision	(R1-073004)	Not treated
Yes	R1-073661	Signaling of Implicit ACK/NACK resources	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision	(R1-073006)	Not treated
Yes	R1-073662	CQI per PRB vs. per group of best PRBs	Nokia Siemens Networks, Nokia	7.2.4	Discussion/Decision		Not treated
Yes	R1-073663	Channel Quality Indicator for LTE MU-MIMO	Nokia, Nokia Siemens Networks	7.2.6	Discussion/Decision		Not treated
Yes	R1-073664	Effect of Precoding Granularity on LTE Multiuser MIMO	Nokia, Nokia Siemens Networks	7.2.6	Discussion/Decision		Not treated
Yes	R1-073665	On the Need of Downlink Dedicated RS	Nokia, Nokia Siemens Networks	7.2.6	Discussion/Decision		Noted
Yes	R1-073666	LTE Multiuser MIMO and Interference Suppression in the UE	Nokia, Nokia Siemens Networks	7.2.6	Discussion/Decision		Not treated
Yes	R1-073667	Number of spatially multiplexed users for LTE DL MU-MIMO	Nokia, Nokia Siemens Networks	7.2.6	Discussion/Decision		Not treated
Yes	R1-073668	Transmission of P-BCH, P-SCH and S-SCH on dedicated MBMS carrier	Nokia, Nokia Siemens Networks	7.2.8	Discussion/Decision		Not treated
Yes	R1-073669	Interleaving for LTE Shared Channels	Nokia Siemens Networks, Nokia	7.3	Discussion/Decision		Not treated

Yes	R1-073670	Soft Combining in LTE	Nokia Siemens Networks, Nokia	7.3	Discussion/Decision		Not treated
Yes	R1-073671	Physical Channel Segmentation	Nokia Siemens Networks, Nokia	7.3	Discussion/Decision		Not treated
Yes	R1-073672	Bit Ordering for CRC	Nokia Siemens Networks, Nokia	7.3	Discussion/Decision		Not treated
Yes	R1-073673	On the Number of HARQ-processes	Nokia, Nokia Siemens Networks	7.3	Discussion/Decision		Not treated
Yes	R1-073674	Overload Indicator handling for LTE	Nokia Siemens Networks, Nokia	7.4.2	Discussion/Decision		Not treated
Yes	R1-073675	Closed loop power control corrections for PUSCH	Nokia Siemens Networks, Nokia	7.4.2	Discussion/Decision		Not treated
Yes	R1-073676	Power control headroom reports for EUTRAN uplink	Nokia Siemens Networks, Nokia	7.4.2	Discussion/Decision		Not treated
Yes	R1-073677	Summary of Power Control E-mail Discussion	Nokia Siemens Networks	7.4.2	Discussion/Decision		Noted
Yes	R1-073678	Cluster based Overload Indication	Nokia Siemens Networks, Nokia	7.4.2	Discussion/Decision		Not treated
Yes	R1-073679	Low load scenarios with CQI-based interference coordination	Nokia Siemens Networks, Nokia	7.4.3	Discussion/Decision		Not treated
Yes	R1-073680	CQI Trigger Mechanism	Nokia Siemens Networks, Nokia	7.4.5	Discussion/Decision		Not treated
Yes	R1-073681	CQI reporting requirements for EUTRA UE	Nokia Siemens Networks, Nokia	7.4.5	Discussion/Decision		Not treated
Yes	R1-073682	Node B measurements for LTE	Nokia Siemens Networks	7.5	Discussion/Decision		Withdrawn
Yes	R1-073683	Investigation on P-SCH Specific Scrambling Sequences for S-SCH	NTT DoCoMo	7.2.7	Discussion/decision		Not treated
Yes	R1-073684	Cell ID Assignment for Home Node B	NTT DoCoMo	7.2.7	Discussion/decision		Not treated
Yes	R1-073685	Usage of Remaining Resource Elements in Resource Blocks Multiplexed with PBCH and SCH	NTT DoCoMo	7.2.5	Discussion/decision		Not treated
Yes	R1-073686	Necessity of Time Diversity for PDSCH	NTT DoCoMo	7.4.5	Discussion/decision		Not treated
Yes	R1-073687	RB-level Distributed Transmission Method for Shared Data Channel in E-UTRA Downlink	NTT DoCoMo	7.2.5	Discussion/decision		Noted
Yes	R1-073688	Control Signaling for Uplink Frequency Hopping in E-UTRA	NTT DoCoMo	7.2.5	Discussion/decision		Not treated
Yes	R1-073689	On PRACH Structure for 1.4 MHz System Bandwidth	NTT DoCoMo	7.2.9	Discussion/decision		Not treated
Yes	R1-073690	PRACH Multiplexing Method and Slot Configuration for E-UTRA Uplink	NTT DoCoMo	7.2.9	Discussion/decision		Not treated
Yes	R1-073691	Sounding RS Structure in E-UTRA Uplink	NTT DoCoMo	7.2.2	Discussion/decision		Not treated
Yes	R1-073692	Assignment Scheme for Sounding Reference Signals in E-UTRA Uplink	NTT DoCoMo	7.2.2	Discussion/decision		Not treated
Yes	R1-073693	Necessity of Multiple Bandwidths for Sounding Reference Signals	NTT DoCoMo	7.2.2	Discussion/decision		Not treated
No	R1-073694	Uplink Power Control Method for E-UTRA	NTT DoCoMo	7.4.2	Discussion/decision		Missing
No	R1-073695	Investigation on Effect of Overload Indicator for Uplink Inter-cell Power Control	NTT DoCoMo	7.4.3	Discussion/decision		Missing
No	R1-073696	Multiplexing Method of Control Signals in PDCCH	NTT DoCoMo	7.2.3	Discussion/decision		Missing
Yes	R1-073697	Investigation on Control Information Bits in PDCCH	NTT DoCoMo	7.2.3	Discussion/decision		Not treated
Yes	R1-073698	ACK/NACK Transmission Method in E-UTRA Downlink	NTT DoCoMo	7.2.3	Discussion/decision		Not treated
Yes	R1-073699	Views on RTD for Hybrid ARQ in E-UTRA	NTT DoCoMo	7.3	Discussion/decision		Not treated

Yes	R1-073700	PUCCH Structure Considering Sounding RS Transmission in E-UTRA Uplink	NTT DoCoMo	7.2.4	Discussion/decision		Not treated
Yes	R1-073701	Basic Method for CQI Feedback in E-UTRA	NTT DoCoMo	7.2.4	Discussion/decision		Not treated
No	R1-073702	Transmission Scheme for ACK/NACK and CQI Information from Same UE in E-UTRA Uplink	NTT DoCoMo	7.2.4	Discussion/decision		Missing
Yes	R1-073703	Investigation on Performance of PUCCH in Coverage-limited Conditions	NTT DoCoMo	7.2.4	Discussion/decision		Not treated
Yes	R1-073704	Feedback Control for MBMS in E-UTRA	NTT DoCoMo	7.2.4	Discussion/decision		Not treated
Yes	R1-073705	Persistent Scheduling in E-UTRA	NTT DoCoMo	7.2.4	Discussion/decision		Not treated
Yes	R1-073706	Investigation on Adaptive Beamforming Using Dedicated RS in E-UTRA Downlink	NTT DoCoMo	7.2.1	Discussion/decision		Noted
Yes	R1-073707	Investigation on Frequency Granularity of SU-MIMO Precoding in E-UTRA Downlink	NTT DoCoMo	7.2.6	Discussion/decision		Noted
Yes	R1-073708	Investigation on Throughput Performance of MU-MIMO in E-UTRA Downlink	NTT DoCoMo	7.2.6	Discussion/decision		Not treated
Yes	R1-073709	Discussion on contention and dedicated resource allocation	LG Electronics	7.2.9	Discussion/decision		Not treated
Yes	R1-073710	Performance comparison of identity channel interleaving, channel interleaving within one OFDM symbol, and systematic/parity bit interlacing	Alcatel-Lucent	7.3	Discussion		Not treated
Yes	R1-073711	Signalling of MBSFN subframe allocations	Alcatel-Lucent	7.2.3	Discussion		Not treated
Yes	R1-073712	On the specification of restricted set of cyclic shifts of root Zadoff-Chu sequences	Huawei, Panasonic, LGE, Nokia, Nokia Siemens Networks	7.2.9	Discussion/decision		Not treated
Yes	R1-073713	Draft reply to LS on HS-SCCH less + MIMO [R1-073245]	Philips, Ericsson, Nokia, Nokia Siemens Networks, NXP Semiconductors	5	LS_out	R1-073817	Revised
Yes	R1-073714	Draft reply to LS on Physical Layer Aspects of eMBMS Counting [R1-073246]	Philips, NXP Semiconductors	5	LS_out	R1-073818	Revised
Yes	R1-073715	Phase reference for downlink beamforming	Philips, NXP Semiconductors	7.2.1	Discussion / decision		Noted
Yes	R1-073716	Discussion of PDCCH message formats	Philips	7.2.3	Discussion / decision		Not treated
Yes	R1-073717	Proposal for resource allocation signalling on PDCCH	Philips	7.2.3	Discussion / decision		Not treated
Yes	R1-073718	Vector quantisation with successive refinement for MIMO feedback	Philips, NXP Semiconductors	7.2.4	Discussion / decision		Not treated
Yes	R1-073719	CQI reporting for TDD	Philips, NXP Semiconductors	7.2.4	Discussion / decision		Not treated
Yes	R1-073720	Way forward for DVRB to PRB mapping for EUTRA downlink	Philips, NXP Semiconductors	7.2.5	Discussion / decision		Not treated
Yes	R1-073721	Codebook for MU-MIMO	Philips	7.2.6	Discussion / decision		Not treated
Yes	R1-073722	CQI definition for MU-MIMO	Philips	7.2.6	Discussion / decision		Not treated
Yes	R1-073723	Signalling for UL resource allocation	Philips	7.2.3	Discussion / decision		Not treated
Yes	R1-073724	UE procedure for ACK/NACK detection	Philips, NXP Semiconductors	7.4.6	Discussion / decision		Not treated
Yes	R1-073725	TS 36.211 v1.2.2	Ericsson	7.1	TS	R1-073823	Revised
Yes	R1-073726	Dedicated reference signal for E-UTRA Frame Structure Type1	Ericsson	7.2.1	Discussion / decision		Noted
Yes	R1-073727	PUCCH RS	Ericsson	7.2.2	Discussion / decision		Not treated
Yes	R1-073728	PUSCH RS	Ericsson	7.2.2	Discussion / decision		Noted
Yes	R1-073729	Sounding RS	Ericsson	7.2.2	Discussion / decision		Not treated

Yes	R1-073730	ID-specific CRC on DL-SCH/UL-SCH	Ericsson	7.3	Discussion / decision		Not treated
Yes	R1-073731	On the number of hybrid ARQ processes in LTE	Ericsson	7.2.3	Discussion / decision		Not treated
Yes	R1-073732	PUCCH FH in TDD frame structure Type2	Ericsson	7.2.4	Discussion / decision		Not treated
Yes	R1-073733	Allocation of uplink control resources	Ericsson	7.2.4	Discussion / decision		Not treated
Yes	R1-073734	Realizing Codebook Subset Restriction	Ericsson	7.2.6	Discussion / decision		Noted
Yes	R1-073735	Extending Codeword to Layer Mapping for Efficient Support of Retransmissions	Ericsson	7.2.6	Discussion / decision		Not treated
Yes	R1-073736	Information mapping on the Secondary Synchronization Signal	Ericsson	7.2.7	Discussion / decision		Not treated
Yes	R1-073737	RACH for frame structure type 2	Ericsson	7.2.9	Discussion / decision		Noted
Yes	R1-073738	RACH transmission timing alignment for LTE TDD	Ericsson	7.4.4	Discussion / decision		Not treated
Yes	R1-073739	Performance of Convolutional Code RM Algorithms	Ericsson	7.3	Discussion / decision		Not treated
Yes	R1-073740	Turbo Decoding Resource Budgeting	Ericsson	7.3	Discussion / decision		Not treated
Yes	R1-073741	Performance and Complexity of Per-Segment CRC Methods	Ericsson	7.3	Discussion / decision		Not treated
Yes	R1-073742	Simplified RE Assignment for Code Block Segments	Ericsson	7.3	Discussion / decision		Not treated
Yes	R1-073743	On radio link synchronisation monitoring	Ericsson	7.4.1	Discussion / decision		Not treated
Yes	R1-073744	UL power control for E-UTRA: Comments on open issues	Ericsson	7.4.2	Discussion / decision		Not treated
Yes	R1-073745	On Inter-cell Interference Coordination Schemes without/with Traffic Load Indication	Ericsson	7.4.3	Discussion / decision		Not treated
Yes	R1-073746	On CQI Reporting	Ericsson	7.4.5	Discussion / decision		Not treated
Yes	R1-073747	Explicit Out of Coverage Reporting Mechanism in E-UTRAN	Ericsson	7.4.1	Discussion / decision		Not treated
No	R1-073748	Introduction of MIMO with 64QAM	Ericsson	8	Discussion / decision		Withdrawn
Yes	R1-073749	E-mail discussion summary on uplink control signaling	Ericsson	7.2.4	Discussion / decision		Noted
Yes	R1-073750	E-mail discussion summary on downlink control signaling	Ericsson	7.2.3	Discussion / decision		Noted
Yes	R1-073751	On open issues channel coding	Ericsson	7.3	Discussion / decision		Not treated
Yes	R1-073752	Regarding Measurements During CPC Downlink DRX Operation	Marvell	6	Discussion		Withdrawn
Yes	R1-073753	UE Capability and MBSFN	Motorola	7.3	Discussion/Decision		Not treated
Yes	R1-073754	UL RS Generation for E-UTRA	Motorola	7.2.2	Discussion/Decision		Not treated
Yes	R1-073755	E-UTRA UL RS planning and hopping considerations	Motorola	7.2.2	Discussion/Decision		Not treated
Yes	R1-073756	Benefit of Non-Persistent UL Sounding for Frequency-Hopping PUSCH	Motorola	7.2.2	Discussion/Decision		Not treated
Yes	R1-073757	UL Sounding RS for E-UTRA	Motorola	7.2.2	Discussion/Decision		Not treated
Yes	R1-073758	Uplink Control Signaling with Persistent Scheduling	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073759	Comparison of SU and MU MIMO Performance	Motorola	7.2.6	Discussion/Decision		Not treated
Yes	R1-073760	Channel Estimation for Open Loop Beamforming	Motorola	7.2.6	Discussion/Decision		Noted

Yes	R1-073761	Open Loop Beamforming	Motorola	7.2.6	Discussion/Decision		Not treated
Yes	R1-073762	Optimisation of P-SCH Indices for Synchronous Network Operation	Motorola	7.2.7	Discussion/Decision		Not treated
Yes	R1-073763	Evaluation of Scrambling Methods for S-SCH	Motorola	7.2.7	Discussion/Decision		Not treated
Yes	R1-073764	Indication of Frame Boundary Using S-SCH	Motorola	7.2.7	Discussion/Decision		Not treated
Yes	R1-073765	Considerations on P-BCH Scrambling Sequence Design	Motorola	7.2.8	Discussion/Decision		Not treated
Yes	R1-073766	Way forward for CQI reporting	Motorola	7.2.4	Discussion/Decision		Not treated
Yes	R1-073767	UL/DL HARQ Timing	Alcatel-Lucent	7.3	Discussion/Decision		Not treated
Yes	R1-073768	Quantization and Range of UE Specific Correction Value in PUSCH Power Control	Alcatel-Lucent	7.4.2	Discussion/Decision		Not treated
Yes	R1-073769	Multiplexing the Scheduling Request in the Uplink	Alcatel-Lucent	7.2.4	Discussion/Decision		Not treated
No	R1-073770	Scheduling Request Transmission	Alcatel-Lucent	7.2.4	Discussion/Decision		Withdrawn
Yes	R1-073771	Power Offsets to Maintain QoS for Persistent Allocations in the Presence of Control Channel Multiplexing for the E-UTRA Uplink	Alcatel-Lucent	7.4.6	Discussion/Decision		Not treated
Yes	R1-073772	VRB addressing for localized and distributed DL transmission	Alcatel-Lucent	7.2.5	Discussion/Decision		Not treated
Yes	R1-073773	Signaling of Frequency Hopping for UL Transmission	Alcatel-Lucent	7.2.4	Discussion/Decision		Not treated
Yes	R1-073774	Processing Gain and Uplink Channel Sounding	Freescale Semiconductor	7.2.2	Discussion		Not treated
Yes	R1-073775	Uplink Channel Sounding Results' Discussion	Freescale Semiconductor	7.2.2	Discussion		Not treated
Yes	R1-073776	On the TDD UL Grant channel	IPWireless	7.2.3	Decision		Not treated
Yes	R1-073777	Draft Agenda for RAN1#50 meeting	RAN1 Chairman	2	Decision	(R1-073240)	Agreed
Yes	R1-073778	Rotational CDM for L1/L2 Control Channel Signaling in E-UTRA Downlink	KDDI	7.2.3	Discussion/Decision		Not treated
Yes	R1-073779	An Evaluation of the Rotational CDM for L1/L2 Control Channel	KDDI	7.2.3	Discussion/Decision		Not treated
Yes	R1-073780	System-Level Evaluation of the Rotational CDM for L1/L2 Control Channel	KDDI	7.2.3	Discussion/Decision		Not treated
Yes	R1-073781	Uplink Data-non-associated Control Signaling in E-UTRA	KDDI	7.2.4	Discussion		Not treated
Yes	R1-073782	Scheduling Request Channel in E-UTRA Uplink	KDDI	7.2.4	Discussion/Decision		Not treated
Yes	R1-073783	Multiplexing of PDCCHs of Multiple Ues in E-UTRA Downlink	KDDI	7.2.3	Discussion/Decision		Not treated
Yes	R1-073784	Hybrid FDM/CDM Based Multiplexing for ACK/NACK Signals in E-UTRA Downlink	KDDI	7.2.3	Discussion/Decision		Not treated
Yes	R1-073785	Multiplexing for L1/L2 Control Signals in E-UTRA Downlink	KDDI	7.2.3	Discussion/Decision		Not treated
Yes	R1-073786	Power Control for RACH	Alcatel-Lucent	7.4.2	Discussion/Decision		Not treated
Yes	R1-073787	Summary of email discussion on Measurements	Ericsson	7.5	Discussion/Decision		Noted
Yes	R1-073788	MBSFN Downlink Optimised Broadcast for 3.84Mcps TDD	IPWireless	9	Discussion/Decision		Noted
Yes	R1-073789	MBSFN DOB	Ericsson	9	Discussion		Noted
Yes	R1-073790	25.221 CR146 (Rel-7, B) "Support for MBSFN DOB operation"	Ericsson	9	CR		Noted
Yes	R1-073791	25.222 CR139 (Rel-7, B) "Support for MBSFN DOB operation"	Ericsson	9	CR		Noted
Yes	R1-073792	25.223 CR047 (Rel-7, B) "Support for MBSFN DOB operation"	Ericsson	9	CR		Noted
Yes	R1-073793	Utilization of the Redundancy Version (RV) Parameter for HARQ	Broadcom	7.3	Discussion/Decision		Withdrawn
Yes	R1-073794	Specification of cell-specific DL RS FH sequences	Huawei	7.2.1	Discussion/Decision		Not treated

Yes	R1-073795	DL Unicast Resource Allocation Signalling using L1L2 control channels	NEC Group	7.2.3	Discussion/Decision	(R1-073458)	Not treated	
Yes	R1-073796	Improved E-HICH signature allocation for LCR-TDD	Spreadtrum Communications	6	Information	(R1-073471)	Noted	
Yes	R1-073797	25222 CR138r1 (Rel-7, C) "Improved E-HICH signature allocation method for LCR-TDD"	Spreadtrum Communications	6	CR	(R1-073472)	Agreed	
Yes	R1-073798	S-SCH scrambling and mepping methods	ETRI	7.2.7	Discussion/Decision	(R1-073414)	Not treated	
Yes	R1-073799	Enhanced CQI Feedback with Reduced Overhead for E-UTRA	Icera Semiconductor	7.2.4	Discussion/Decision		Not treated	
Yes	R1-073800	"Draft LS on MBSFN DOB"	IPWireless	9	LS_out		Noted	
Yes	R1-073801	25.201 CR036 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless	9	CR		Noted	
Yes	R1-073802	25.221 CR147 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless	9	CR		Noted	
Yes	R1-073803	25.222 CR140 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless	9	CR		Noted	
No	R1-073804	25.223 CR048 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless	9	CR		Withdrawn	
Yes	R1-073805	25.224 CR165 (Rel-7, cat-B) "Downlink Optimised Broadcast"	IPWireless	9	CR		Noted	
Yes	R1-073806	On Rate Matching Parameters for Turbo Codes	Ericsson	7.3	Discussion/Decision		Not treated	
Yes	R1-073807	Introduce TD-SCDMA industry standard in CCSA to 3GPP	RITT, CMCC, ZTE, CATT, TD-TECH, Spreadtrum Communications, Alcatel Shanghai Bell	6	Discussion	(R1-073448)	Noted	
Yes	R1-073808	25224 CR164r1 "Improvement on the power control of E-PUCH in 1.28Mcps TDD"	ZTE	6	CR	(R1-073449)	Agreed	
Yes	R1-073809	PDCCH contents – status from e-mail discussions	Ericsson	7.2.3	Discussion/Decision		Not treated	
Yes	R1-073810	PDCCH payload formats and sizes	Panasonic	7.2.3	Discussion/Decision	(R1-073606)	Not treated	
Yes	R1-073811	Turbo rate matching fine tuning	Nokia Siemens Networks, Nokia	7.3	Discussion/Decision		Not treated	
Yes	R1-073812	CQI tables for HSDPA MIMO	Ericsson	6	Discussion/decision		Noted	
Yes	R1-073813	25.214 CR462 (Rel-7, F) "Correction of MIMO CQI tables"	Ericsson	6	CR	R1-073838	Revised	
Yes	R1-073814	25215 CR176r1 "Adding GANSS related measurements in the FDD physical layer measurements"	Alcatel-Lucent, Orange	6	CR	(R1-073341)	Agreed	
Yes	R1-073815	Draft report of RAN1#49b meeting	MCC Support	3	Approval	(R1-073241)	Agreed	
No	R1-073816	LS on Introduction of Very low bitrate WB-AMR Combinations into 25.993	RAN2, NSN	5	LS_out	(R1-073244)	Withdrawn	
Yes	R1-073817	Reply LS on HS-SCCH less + MIMO	RAN1, Philips	5	LS_out	(R1-073713)	Agreed	
Yes	R1-073818	Draft reply to LS on Physical Layer Aspects of eMBMS Counting [R1-073246]	Philips, NXP Semiconductors	5	LS_out	(R1-073714) R1-073884	Revised	
Yes	R1-073819	TS 36214 v1.2.0	Nokia	7.1	TS	(R1-073637)	Endorsed	
Yes	R1-073820	Request to clarify LTE states for physical layer measurements	Nokia Siemens Networks, Nokia, Panasonic, Ericsson, Motorola	5	LS_out	R1-073875	Revised	
Yes	R1-073821	TS 36212 v1.3.2	Qualcomm Europe	7.1	TS	(R1-073249) R1-073873	Revised	
Yes	R1-073822	On Early Stopping Rules for Turbo Decoding	Ericsson	7.3	Decision		Not treated	
Yes	R1-073823	TS 36211 v1.2.3	Ericsson	7.1	TS	(R1-073725) R1-073872	Revised	
Yes	R1-073824	TS 36213 v1.2.2	Motorola	7.1	TS	(R1-073358) R1-073874	Revised	
Yes	R1-073825	25211CR242r1 (Rel-7, F) "PICH associated HS-SCCH for Enhanced CELL_FACH"	Nokia Siemens Networks, Nokia	6	CR	(R1-073324)	Agreed	
Yes	R1-073826	25211CR247 (Rel-6, F) "Clarification on MICH"	Alcatel-Lucent	6	CR	(R1-073342)	Agreed	
Yes	R1-073827	LS on maximum transport block size for HS-SCCH-less operation	RAN1, Philips	6	LS_out		Agreed	
Yes	R1-073828	25214CR452r1 "CPC preamble and postamble clarification for CQI transmission"	Nokia Siemens Networks, Nokia	6	CR	(R1-073328) R1-073877	Revised	