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.

Petitioners' Exhibit 1023 (Part 2 of 2)
Google et al. v. KT Corporation et al.
IPR2025-00290

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`

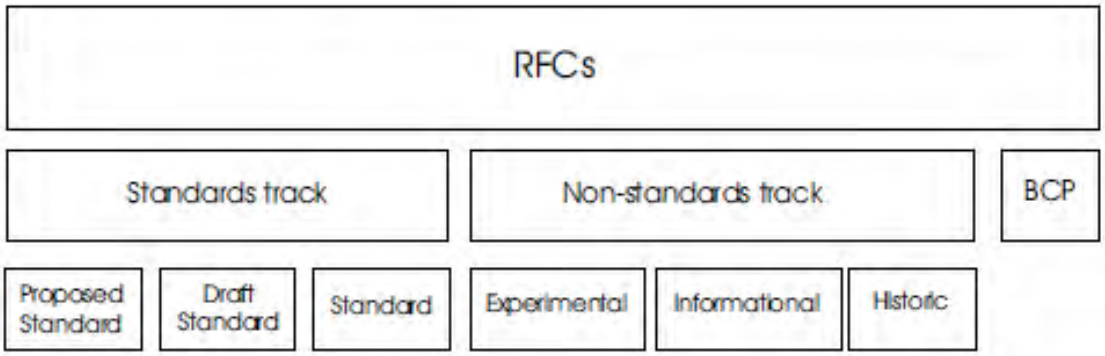


Figure 2.2: RFC types

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/`

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.

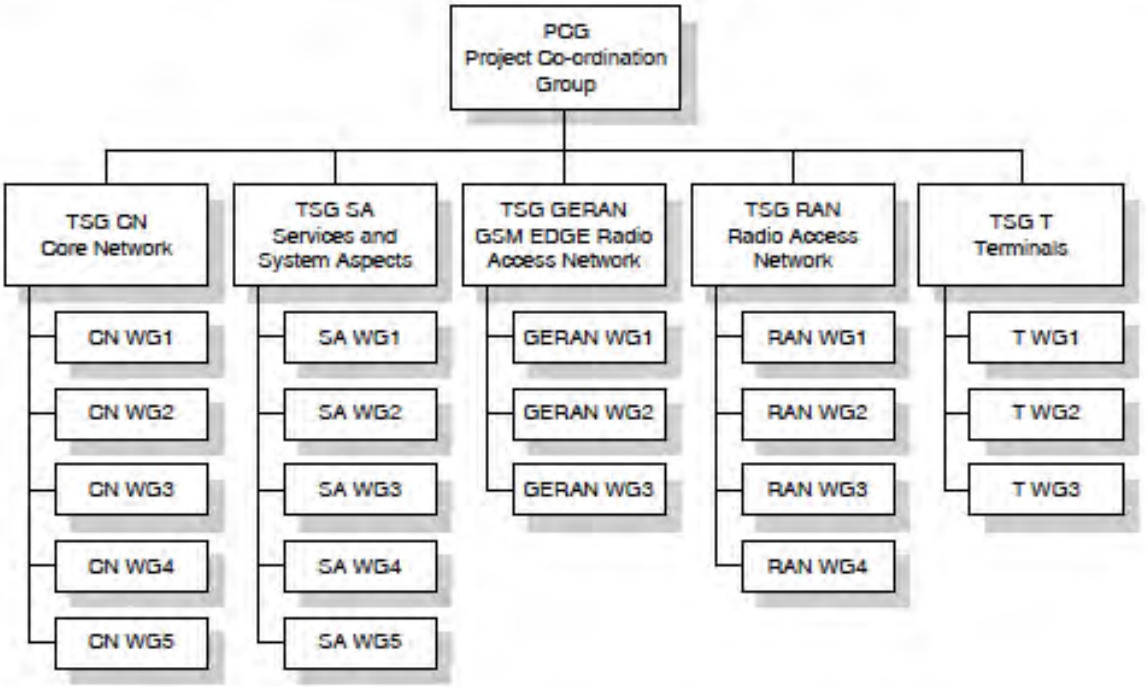


Figure 2.3: The structure of 3GPP

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.

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

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

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

(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

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

(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

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

(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

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

(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

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

(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

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

(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

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

(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

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

(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

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

(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

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

(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

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

(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

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

(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...

Appendix 10

The Wayback Machine - https://web.archive.org/web/20130527114611/http://www.3gpp.org/FAQ



About 3GPP

FAQ

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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.

7178 unique visitors average per day



Takehiro Nakamura, talks about the Release 12 prioritization process in December 2012, prior to the end of his highly succesful term as RAN Chairman

Four new videos have been uploaded...

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

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.

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 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.

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.

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.

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 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 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.

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 .

3GPP Plenary Meetings

Full Meeting Calendar

CT, RAN and SA TSG #60 meetings - Oranjestad, Aruba - From 11 to 19 June
GERAN TSG #59 - Sofia, BG - From 26 to 30 August

CT, RAN and SA TSG #61 meetings - Porto, PT - From 3 to 11 September

Releases

About Releases

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Keywords & Acronyms

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The Evolved Packet Core
Carrier Aggregation explained
GPRS & EDGE
UMTS
HSPA
W-CDMA

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Appendix 11

The Mobile Broadband Standard



Specifications

3GPP specifications are published - free of charge - up to four times a year following the quarterly Technical Specification Group (TSG) plenary meetings. At each TSG round, specs can be

- Newly brought under change control (i.e. at least 80% complete)
- Unchanged from their previous versions
- Revised as a result of incorporating approved Change Requests (either in existing Releases or in the latest Release)
- At Release-freeze time, upgraded to that Release with no technical change

The 3GPP Mobile Competence Centre (MCC) aims to make all Specs available following a TSG round as soon as possible. The target dates are shown in the table below. Where very many CRs have to be implemented, or very many specifications are to be produced, a further week beyond the above deadlines may be required. These dates are agreed by the TSG Chairmen. Over the Christmas and New Year period, when the winter TSG round finishes shortly before the holiday period, an extra week or so is normally added to the final deadlines.

Quick link to the specifications file server area

The link above takes you straight to the specifications, but you need to know what you are looking for.

To find a particular specification by series, look at the Numbering page.

3GPP specifications

The term "3GPP specification" covers all GSM (including GPRS and EDGE), W-CDMA (including HSPA) and LTE (including LTE-Advanced) 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.

The table below leads to information about:

- Specifications arising from each plenary TSG meeting, including the latest versions of each specification that was not changed at that meeting. i.e. each directory holds a complete set of specifications.
- The month of the meeting and the meeting number
- The Status List (ZIPped RTF or Word format) summarizing the current version number for every release of every 3GPP specification following each TSG plenary meeting.
- Details of each specification (working group, rapporteur, the Project Manager in MCC (Mobile Competence Centre), the meeting at which it was, or is expected to be, "frozen" (i.e. the point after which only corrections are allowed) - all are in the Status lists.

Full details of the Specifications, their history and current status can be found in the 3GPP Specifications Status database.

See this link for specs awaited from the most recent Plenary meetings.

year-month	remark click here to see list of specs still awaited from current plenary round	latest status	specs directory	TSG CN #	TSG RAN* #	TSG T #	TSG SA #	TSG GERAN #	TSG CT #
2015-12		StatusList	2015-12		70		70	68	70
2015-09		StatusList	2015-09		69		69	67	69
2015-06		StatusList	2015-06		68		68	66	68
2015-03		StatusList	2015-03		67		67	65	67
2014-12		StatusList	2014-12		66		66	64	66

Search

3GPP Website: Search for...

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

ADVANCED FTP SEARCH

Our latest videos



Dino Flore (RAN) and Erik Guttman (SA) (December 2015)



Georg Mayer (CT)

News Feeds

- 3GPP News
- 3GPP tweets

year-month	remark click here to see list of specs still awaited from current plenary round	latest status	specs directory	TSG CN #	TSG RAN* #	TSG T #	TSG SA #	TSG GERAN #	TSG CT #
2014-09		StatusList	2014-09		65		65	63	65
2014-06		StatusList	2014-06		64		64	62	64
2014-03		StatusList	2014-03		63		63	61	63
2013-12		StatusList	2013-12		62		62	60	62
2013-09		StatusList	2013-09		61		61	59	61
2013-06		StatusList	2013-06		60		60	58	60
2013-03		StatusList	2013-03		59		59	57	59
2012-12		StatusList	2012-12		58		58	56	58
2012-09		StatusList	2012-09		57		57	55	57
2012-06		StatusList	2012-06		56		56	54	56
2012-03		StatusList	2012-03		55		55	53	55
2011-12		StatusList	2011-12		54		54	52	54
2011-09		StatusList	2011-09		53		53	51	53
2011-06		StatusList	2011-06		52		52	50	52
2011-03		StatusList	2011-03		51		51	49	51
2010-12		StatusList	2010-12		50		50	48	50
2010-09		StatusList	2010-09		49		49	47	49
2010-06		StatusList	2010-06		48		48	46	48
2010-03		StatusList	2010-03		47		47	45	47
2009-12		StatusList	2009-12		46		46	44	46
2009-09		StatusList	2009-09		45		45	43	45
2009-06		StatusList	2009-06		44		44	42	44
2009-03		StatusList	2009-03		43		43	41	43
2008-12		StatusList	2008-12		42		42	40	42
2008-09		StatusList	2008-09		41		41	39	41
2008-06		StatusList	2008-06		40		40	38	40
2008-03		StatusList	2008-03		39		39	37	39
2007-12		StatusList	2007-12		38		38	36	38

year-month	remark click here to see list of specs still awaited from current plenary round	latest status	specs directory	TSG CN #	TSG RAN* #	TSG T #	TSG SA #	TSG GERAN #	TSG CT #
2007-09		StatusList	2007-09		37		37	35	37
2007-06		StatusList	2007-06		36		36	34	36
2007-03		StatusList	2007-03		35		35	33	35
2006-12		StatusList	2006-12		34		34	32	34
2006-09	GERAN henceforward meets synchronously with other TSGs, so no further "delta" directories necessary.	StatusList	2006-09		33		33	31	33
2006-06	New at GERAN only.		2006-06					30	
2006-06		StatusList	2006-06		32		32		32
2006-04	New at GERAN only.		2006-04					29	
2006-03		StatusList	2006-03		31		31		31
2006-01	New at GERAN only.		2006-01					28	
2005-12		StatusList	2005-12		30		30		30
2005-11	New at GERAN only.		2005-11					27	
2005-09		StatusList	2005-09		29		29		29
2005-08/09	New at GERAN only.		2005-09					26	
2005-06	New at GERAN only.		2005-06					25	
2005-06		StatusList	2005-06		28		28		28
2005-04	New at GERAN only.		2005-04					24	
2005-03	RAN closed and RANnew opened, CN and T closed, CT opened.	StatusList	2005-03	27	27bis, 27	27	27		27
2005-01	New at GERAN only.		2005-01					23	
2004-12		StatusList	2004-12	26	26	26	26		
2004-11	New at GERAN only.		2004-11					22	
2004-09		StatusList	2004-09	25	25	25	25		
2004-08	New at GERAN only.		2004-08					21	
2004-06	New at GERAN only.		2004-06					20	
2004-06		StatusList	2004-06	24	24	24	24		
2004-04	New at GERAN only.		2004-04					19	
2004-03		StatusList	2004-03	23	23	23	23		

year-month	remark click here to see list of specs still awaited from current plenary round	latest status	specs directory	TSG CN #	TSG RAN* #	TSG T #	TSG SA #	TSG GERAN #	TSG CT #
2004-02	New at GERAN only.		2004-02					18	
2003-12		StatusList	2003-12	22	22	22	22		
2003-11	New at GERAN only.		2003-11					17	
2003-09		StatusList	2003-09	21	21	21	21		
2003-09	New at GERAN only.		2003-09					16	
2003-06	New at GERAN only.		2003-06					15	
2003-06		StatusList	2003-06	20	20	20	20		
2003-04	New at GERAN only.		2003-04					14	
2003-02		StatusList	2003-03	19	19	19	19		
2003-02	New at GERAN only.		2003-02					13	
2002-12, 2002-11		StatusList	2002-12	18	18	18	18	12	
2002-09		StatusList	2002-09	17	17	17	17	11	
2002-06	Rel-5 GERAN features content functionally frozen		2002-06					10	
2002-06	Rel-5 features content functionally frozen (remainder, non-GERAN)	StatusList	2002-06	16	16	16	16		
2002-04			2002-04					9	
2002-03	Rel-5 features content functionally frozen (part)	StatusList	2002-03	15	15	15	15		
2002-02								8	
2001-12		StatusList	2001-12	14	14	14	14		
2001-11								7	
2001-09		StatusList	2001-09	13	13	13	13		
2001-08								6	
2001-06		StatusList	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	2001-03	11	11	11	11		
2001-01								3	
2000-12, 2000-11		StatusList	2000-12	10	10	10	10	2	
2000-11									

year-month	remark click here to see list of specs still awaited from current plenary round	latest status	specs directory	TSG CN #	TSG RAN* #	TSG T #	TSG SA #	TSG GERAN #	TSG CT #
2000-09		StatusList	2000-09	9	9	9	9	1	
2000-06		StatusList	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		
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 we recommend using an FTP client software tool such as:

- Ipswitch WS_FTP Pro
- FTPSync
- Filezilla

For additional information relating to 3GPP Specifications, their creation and maintenance, etc. go here.

Confidential Algorithms

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. They may be used only for the development and operation of 3G Mobile Communications and services. Every Beneficiary must sign a Restricted Usage Undertaking with a Custodian and (...)
more »

ASN.1

ASN.1 Object Identifiers Abstract syntax notation (ASN.1) object identifiers maintained by ETSI. ETSI is a recognized organization under the ITU-T (formerly CCITT) arc. The formal rules governing assignment of object identifier values are given in ETSI EG 200 351. Since the 3GPP technical specifications are based on GSM specifications, which use object identifiers under the ETSI node, it (...)
more »

Drafting Rules

The Specification drafting rulesTR 21.801 are the rules for the structure and drafting of documents intended to become a 3GPP Technical Specification or Technical Report. These rules are intended to ensure that such documents are drafted in as uniform a manner as is practicable, irrespective of the technical content. 21.801 is based on the ISO/IEC Directives, Part 3, but is a self-contained (...)
more »

Official Publications

The 3GPP Technical Specifications and Technical Reports have, in themselves, no legal standing. They only become "official" when transposed into corresponding publications of the Partner Organizations (or the national / regional standards body acting as publisher for the Partner). At this point, the specifications are referred to as UMTS within ETSI and FOMA within ARIB/TTC. Some TRs (...)
more »

Page reviewed and updated 2014-03-27, John M Meredith

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SA	**72**	**Busan**	15-17 Jun 2016
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Appendix 12

The Wayback Machine - https://web.archive.org/web/20151105071414/http://www.3gpp.org:80/specifications/specification-numbering

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.

Subject of specification series	3G and beyond / 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) and OAM&P and Charging (overflow from 32.- range)	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)
LTE (Evolved UTRA) and LTE-Advanced radio technology	36 series	-	-
Multiple radio access technology aspects	37 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.

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.

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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, or use the main menu item "Specification Groups".

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.

Page updated:

2015-10-01: Fix broken link to specification groups (JMM)

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CT	**71**	**Goteborg**	07-08 Mar 2016
RAN	**71**	**Goteborg**	07-10 Mar 2016
SA	**71**	**Goteborg**	09-11 Mar 2016
GERAN	**70**	**China**	23-27 May 2016
CT	**72**	**SOUTH KOREA**	13-14 Jun 2016
RAN	**72**	**SOUTH KOREA**	13-16 Jun 2016
SA	**72**	**SOUTH KOREA**	15-17 Jun 2016
GERAN	**71**	**Goteborg**	22-26 Aug 2016
CT	**73**	**US**	19-20 Sep 2016
RAN	**73**	**US**	19-22 Sep 2016
SA	**73**	**US**	21-23 Sep 2016

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Appendix 13

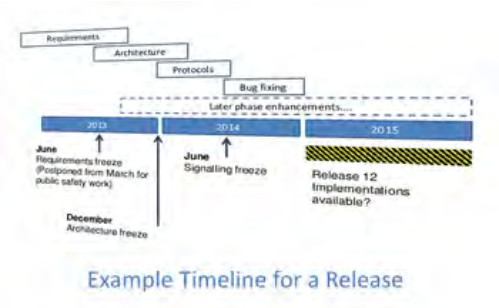
The Mobile Broadband Standard



Releases

3GPP uses a system of parallel "Releases" which provide developers with a stable platform for the implementation of features at a given point and then allow for the addition of new functionality in subsequent Releases.

Details of the specifications needed for each 3GPP Release can be found in the "Release Description" folder of this site and a list of the features per Release can be found in the Work Plan.



Example Timeline for a Release

As a further resource, we have the 3GPP Specification Release version matrix which is a listing (with links) of the Specifications - showing the Release in which each specification was first developed.

Start, Freeze and End dates:

The table below is extracted from the data on the 3GPP Ultimate portal at https://portal.3gpp.org/ "Releases" tab. Please refer to that data for the most up-to-date information.

Future dates are proposals, subject to change.

Name	Status [Note 3]	Start date [Note 2a]	End date	Closure date
Release 14	Open	2014-09-17		
Release 13	Open	2012-09-30	2016-03-11 (SP-71)	
Release 12	Frozen	2011-06-26	2015-03-13 (SP-67)	
Release 11	Frozen	2010-01-22	2013-03-06 (SP-59)	
Release 10	Frozen	2009-01-20	2011-06-08 (SP-52)	
Release 9	Frozen	2008-03-06	2010-03-25 (SP-47)	
Release 8	Frozen	2006-01-23	2009-03-12 (SP-43)	
Release 7	Closed	2003-10-06	2008-03-13 (SP-39)	2014-09-17 (SP-65)
Release 6	Closed	2000-03-28	2005-09-28 (SP-29)	2014-09-17 (SP-65)
Release 5	Closed	2000-05-01 [Note 2a]	2002-09-12 (SP-17)	2014-09-17 (SP-65)
Release 4	Closed	1998-08-01	2001-06-21 (SP-12)	2014-09-17 (SP-65)
Release 2000 [Note 1]	Closed	1999-03-30 [Note 2a]		1999-12-17 (SP-06)

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Release 1999	Closed	1996-11-01	1999-12-17 (SP-06)	2008-06-05 (SP-40)
UMTS	Closed	1994-08-18	1999-02-12 (SMG-28)	2005-06-08 (SP-28)
Release 1998	Closed	1996-03-26	1999-02-12 (SMG-28)	2005-06-08 (SP-28)
Release 1997	Closed	1996-04-15 [Note 2a]		2005-06-08 (SP-28)
Release 96 / Phase 2+	Closed	1995-07-20		2004-09-16 (SP-25)
Phase 2	Closed	1993-03-25		2004-09-16 (SP-25)
Phase 1 extension	Closed	1994-10-01		
Phase 1 DCS-1800	Closed	1992-12-03		
Phase 1	Closed	1987-01-01		

GSM Phases and Version numbers

GSM Release	TS/TR version [Note 2, 4]	3GPP Release	TS/TR version
GSM Phase 1	3.x.y		
GSM Phase 2	4.x.y		
GSM Phase 2+	5.x.y		
GSM Phase 2+ Release 97	6.x.y		
GSM Phase 2+ Release 98	7.x.y		
GSM Phase 2+ Release 99	8.x.y	UMTS Release 99	3.x.y
GSM Phase 2+ Release 00	*9.x.y*		

3GPP Releases and Version numbers

Release	TS/TR version
Release 4	4.x.y
Release 5	5.x.y
Release 6	6.x.y
...	
Release 14	12.x.y
...	

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, devising an abstract architecture of functional elements and the information flows amongst them across reference points between functional entities.
> "Stage 3" is the concrete implementation of the functionality and 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 original CAMEL functionality are referred to as CAMEL phase 2, CAMEL phase 3 and CAMEL phase 4.

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.

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: A Specification 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 2a: The start date for a Release is an indication of when the first work item for that Release was approved at TSG level. In fact, it is somewhat approximate because often work items started in an earlier Release, but not completed, are "promoted" to the next Release. The end date for a Release is an indication of when the detailed protocols become stable. However, see Note 3 below.

Note 3: After "freezing", a Release can have no further additional functions added. However, detailed protocol specifications (stage 3) may not yet be complete. "Freezing" is applied successively for each of the three stages (see below), with stage 3 normally being frozen one or two TSG meetings earlier than the "end" date. The "end" date shown on the 3GU portal is indicative only, since for each Release, a considerable number of refinements and corrections can be expected for at least two years following this date. 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. The individual stage freeze dates can only be seen by 3GU account holders (delegates, officials, secretariat).

Note 4: In the version number of a 3GPP TS or TR, the first field (before the first dot) indicates the Release number according to the table below. 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 a TSG plenary round, 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. Version numbering was unified from Release 4 onwards, regardless of radio access technology. This implied a renumbering of the GSM-only specifications (see the Specification Numbering page).

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Appendix 14

The Wayback Machine - https://web.archive.org/web/20130812133550/http://3gpp.org/RAN2-Radio-layer-2-and-Radio-layer



RAN2 - Radio layer 2 and Radio layer 3 RR

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.

**Election for officials of RAN2 to be held in August 2013

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

3GPP Website:

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

3GPP News
3GPP Partners News
3GPPlive tweets

6752 unique visitors average per day

RAN Working groups and Ad Hoc groups	
TSG RAN WG4	Radio performance and protocol aspects (system) - RF parameters and BS conformance
TSG RAN WG5	Mobile terminal conformance testing
TSG RAN AHG1	Ad-hoc group on ITU (internal) co-ordination



more »

3GPP Plenary Meetings

Full Meeting Calendar

GERAN TSG #59 - Sofia, BG - From 26 to 30 August

CT, RAN and SA TSG #61 meetings - Porto, PT - From 3 to 11 September

Releases

About Releases

Release 12

Release 11

Release 10

Release 9

Release 8

Release 7

Release 6

Release 5

Release 4

Release 1999

Keywords & Acronyms

Browse Technologies

NAS

LTE-Advanced

LTE

HSPA

The Evolved Packet Core

Carrier Aggregation explained

GPRS & EDGE

UMTS

HSPA

W-CDMA

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Appendix 15

The Wayback Machine - https://web.archive.org/web/20130302100307/http://www.3gpp.org/





Forum - Release One

femtocells. It include
RFPs and best pract
future Releases, ther
cases and solutions.

m will help network operators
l to know" to deploy residential
ey standards, specifications for
g femtocells. In preparation for
mall cells and on backhaul use

more »



Recruitment of Testing Project Leader

Vacancy Deadline 28 April

The ETSI Centre for Testing and Interoperability (CTI) is seeking to recruit a technical expert with expertise in 3GPP technologies, specialising in testing aspects.

The successful candidate will be the project leader responsible for a team of 16 -18 international experts, mainly from Europe and Asia, that are developing test specifications for 3GPP TSG RAN Working Group 5 (RAN5). He or she will have proven full knowledge of 3GPP air interface protocols, a strong background in testing and test methodology and management skills.

more »

7244 unique visitors average per day



3GPP Plenary Meetings
Full Meeting Calendar

Releases
About Releases

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

Keywords & Acronyms
Browse Technologies

- LTE-Advanced
- LTE
- HSPA
- HSPA
- The Evolved Packet Core
- Carrier Aggregation explained
- GPRS & EDGE
- UMTS
- W-CDMA
- SON

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Appendix 16

The Wayback Machine - https://web.archive.org/web/20130710224611/http://www.3gpp.org/ftp/

Index of /ftp

Name	Last modified	Size	Description
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Joint_Meetings/	26-Sep-2012 18:03	-	
Meetings_3GPP_ETSI/	30-May-2013 14:53	-	
Op/	17-Jan-2013 09:45	-	
PCG/	17-Jan-2013 09:42	-	
Specs/	24-Jun-2013 22:32	-	
tsg_cn/	04-Nov-2008 19:53	-	
tsg_ct/	04-Nov-2008 20:05	-	
tsg_geran/	04-Nov-2008 20:17	-	
tsg_ran/	04-Nov-2008 21:08	-	
tsg_sa/	04-Nov-2008 21:51	-	
tsg_t/	04-Nov-2008 22:08	-	
webExtensions/	04-Apr-2013 09:17	-	
workshop/	08-Mar-2012 16:02	-	

Appendix 17

The Wayback Machine - https://web.archive.org/web/20130512230413/http://www.3gpp.org/ftp/tsg_ran/

Index of /ftp/tsg_ran

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TSG_RAN/	19-Feb-2013 15:06	-	
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WG2_RL2/	20-Apr-2013 16:54	-	
WG3_Iu/	16-Apr-2013 22:34	-	
WG4_Radio/	26-Apr-2013 11:16	-	
WG5_Test_ex-T1/	17-Oct-2012 11:31	-	
WGs_LongTermEvolution/	04-Nov-2008 21:08	-	

Appendix 18

The Wayback Machine - https://web.archive.org/web/20130726014253/http://www.3gpp.org/ftp/tsg_ran/W…

Index of /ftp/tsg_ran/WG2_RL2

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R2_2001.zip	04-Jan-2002 19:12	134K	
R2_2002.zip	21-Jan-2003 15:07	156K	
R2_2003.zip	24-Nov-2003 11:08	122K	
R2_2004.zip	01-Dec-2004 10:45	138K	
R2_2005.zip	14-Nov-2005 13:57	171K	
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R2_2010.zip	07-Jan-2012 03:27	1.2M	
R2_2011.zip	14-Feb-2012 01:07	1.2M	
R2_2012.zip	17-Mar-2013 23:32	1.1M	
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TSGR2_02/	04-Nov-2008 20:35	-	
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TSGR2_67bis/	29-Sep-2009 18:56	-
TSGR2_68/	28-Oct-2009 23:37	-
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TSGR2_83/	23-Jul-2013 17:38	-
TSGR2_83bis/	20-Apr-2013 16:54	-
TSGR2_AHs/	04-Nov-2008 20:47	-

Appendix 19



3GPP_TSG_RAN_WG2 Archives

September 2013, Week 2

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: Proposed agenda for RAN2-83bis
From: Henning Wiemann <[log in to unmask]>
Reply To: Henning Wiemann <[log in to unmask]>
Date: Fri, 13 Sep 2013 11:37:32 +0000
Content-Type: multipart/mixed
Parts/Attachments: text/plain (1851 bytes) , text/html (8 kB) , RAN2-83bis Draft Proposed Agenda.zip (143 kB)

Dear all,

Please find attached the draft proposed agenda for RAN2-83bis. Please provide comments no later than Monday, 16th.

1) Deadlines:
Document number request deadline and submission deadline for RAN2-83bis: Friday, 2013-September-27, 23:59 Pacific time

Upload announcements on the RAN2 email reflector are not required for TDocs submitted before the submission deadline. In the exceptional case that you upload a document after the submission deadline, an announcement is required to be sent on the RAN2 email reflector. Based on discussions with other RAN WG chairmen, we agreed to be stricter on applying submission deadlines thus late submissions might not be treated.

2) As discussed, we want **high quality CR coversheets** along the agreed guidelines for isolated impact statements and consequences if not approved for all CRs up to and including **Rel-11**. Please ensure also that CRs are based on the latest available version of the specification and that all fields on the cover page are set correctly. Please **provide all documents in Word©2003 "doc" format**.

3) W.r.t. meeting organization, the **UMTS breakout session will start Tuesday morning** and will continue until no later than Friday lunch. Before/after we might handle UMTS revisits or joint issues.

--
HENNING WIEMANN
3GPP RAN2 Chairman

Ericsson GmbH
Ericsson Research
Ericsson Allee 1
52134 Herzogenrath, Germany

ATOM RSS1 RSS2

Appendix 20

The Wayback Machine - https://web.archive.org/web/20140327073538/http://3gpp.org/ftp/tsg_ran/WG2_…

3gpp.org - /ftp/tsg_ran/WG2_RL2/TSGR2_83bis/Agenda/

[To Parent Directory]

9/19/2013 8:56 PM 142302 R2-133050.zip

Appendix 21

The Wayback Machine - https://web.archive.org/web/20140327054404/http://3gpp.org/ftp/tsg_ran/WG2_…

3gpp.org - /ftp/tsg_ran/WG2_RL2/TSGR2_83bis/Report/

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10/11/2013 4:51 PM <dir> tmp

Appendix 22

www.3gpp.org / ftp / tsg_ran / WG2_RL2 / TSGR2_83bis / Docs

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R2-133183.zip	2013/09/28 6:25	19,4 KB
R2-133184.zip	2013/09/28 6:29	28,3 KB
R2-133185.zip	2013/09/28 6:34	25,6 KB
R2-133186.zip	2013/09/28 6:35	66 KB
R2-133187.zip	2013/09/28 6:36	52 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-133189.zip	2013/09/27 12:38	16,8 KB
R2-133190.zip	2013/09/27 12:39	16,3 KB
R2-133191.zip	2013/09/27 12:47	53 KB
R2-133192.zip	2013/09/27 14:27	161,5 KB
R2-133193.zip	2013/09/27 12:48	21,2 KB
R2-133194.zip	2013/09/27 12:49	13,4 KB
R2-133195.zip	2013/09/27 12:52	15,5 KB
R2-133196.zip	2013/09/27 16:35	10,2 KB
R2-133198.zip	2013/09/27 16:43	53,9 KB
R2-133199.zip	2013/09/27 16:48	14,3 KB
R2-133200.zip	2013/09/27 0:06	20,9 KB
R2-133201.zip	2013/09/27 11:45	18,7 KB
R2-133202.zip	2013/09/28 0:05	19 KB
R2-133203.zip	2013/09/27 23:45	229,8 KB
R2-133204.zip	2013/09/27 23:47	62 KB
R2-133205.zip	2013/09/27 23:48	208,7 KB
R2-133206.zip	2013/09/28 4:09	75,2 KB
R2-133207.zip	2013/09/27 8:38	82,5 KB
R2-133208.zip	2013/09/27 10:25	572,8 KB
R2-133209.zip	2013/09/27 10:27	276,2 KB
R2-133210.zip	2013/09/27 10:32	229,7 KB
R2-133211.zip	2013/09/27 15:15	18 KB
R2-133212.zip	2013/09/28 4:36	21,5 KB
R2-133213.zip	2013/09/27 8:41	231,1 KB
R2-133214.zip	2013/09/27 8:48	119,5 KB
R2-133215.zip	2013/09/27 8:36	21,8 KB
R2-133216.zip	2013/09/27 13:55	32,4 KB
R2-133217.zip	2013/09/27 13:58	108,1 KB
R2-133218.zip	2013/09/27 13:59	24,1 KB
R2-133219.zip	2013/09/27 14:01	258,8 KB
R2-133220.zip	2013/09/27 14:03	27 KB
R2-133221.zip	2013/09/27 14:04	41,4 KB
R2-133222.zip	2013/09/27 14:04	52,5 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-133225.zip	2013/09/27 8:59	152,9 KB
R2-133226.zip	2013/09/27 9:32	22,9 KB
R2-133227.zip	2013/09/27 9:33	22,7 KB
R2-133228.zip	2013/09/27 9:35	195,4 KB
R2-133229.zip	2013/09/27 9:36	23,1 KB
R2-133230.zip	2013/09/27 9:36	214,5 KB
R2-133231.zip	2013/09/27 9:37	23,1 KB
R2-133232.zip	2013/09/27 9:37	23,1 KB
R2-133233.zip	2013/09/27 2:22	124,7 KB
R2-133234.zip	2013/09/27 2:26	455,3 KB
R2-133235.zip	2013/09/27 22:09	34,7 KB
R2-133236.zip	2013/09/27 22:49	35,4 KB
R2-133237.zip	2013/09/27 23:22	31,4 KB
R2-133238.zip	2013/09/27 22:12	29,8 KB
R2-133239.zip	2013/09/28 2:16	43,5 KB
R2-133240.zip	2013/09/28 2:18	44,7 KB
R2-133241.zip	2013/09/28 5:03	25,8 KB
R2-133242.zip	2013/09/27 7:17	51,4 KB
R2-133243.zip	2013/09/27 7:15	65,2 KB
R2-133244.zip	2013/09/27 9:40	41,1 KB
R2-133245.zip	2013/09/27 8:38	93,3 KB
R2-133246.zip	2013/09/27 17:50	24,8 KB
R2-133247.zip	2013/09/27 12:33	245 KB
R2-133248.zip	2013/09/27 17:56	140,2 KB
R2-133249.zip	2013/09/27 12:33	215,6 KB
R2-133250.zip	2013/09/27 12:34	361,4 KB
R2-133251.zip	2013/09/27 17:59	108,9 KB
R2-133252.zip	2013/09/27 12:34	21,5 KB
R2-133253.zip	2013/09/27 12:35	142,5 KB
R2-133254.zip	2013/09/27 12:44	1214,8 KB
R2-133255.zip	2013/09/27 18:02	22,5 KB
R2-133256.zip	2013/09/27 12:44	199,8 KB

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R2-133262.zip	2013/09/27 12:31	34,4 KB
R2-133263.zip	2013/09/28 1:39	107,6 KB
R2-133264.zip	2013/09/27 12:32	443,6 KB
R2-133265.zip	2013/09/27 12:45	33,4 KB
R2-133266.zip	2013/09/28 1:42	26,8 KB
R2-133267.zip	2013/09/27 12:38	40 KB
R2-133268.zip	2013/09/27 12:38	38,6 KB
R2-133269.zip	2013/09/27 12:39	76,1 KB
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R2-133275.zip	2013/09/28 7:15	2261,9 KB
R2-133276.zip	2013/09/28 0:08	13,4 KB
R2-133277.zip	2013/09/27 12:16	30,1 KB
R2-133278.zip	2013/09/27 21:43	120,3 KB
R2-133279.zip	2013/09/28 0:07	18 KB
R2-133281.zip	2013/09/28 3:33	79,6 KB
R2-133282.zip	2013/09/27 17:37	28,8 KB
R2-133283.zip	2013/09/27 17:43	1913,2 KB
R2-133284.zip	2013/09/27 17:44	35,7 KB
R2-133285.zip	2013/09/27 11:40	296,2 KB
R2-133286.zip	2013/09/28 5:51	32,3 KB
R2-133287.zip	2013/09/27 11:42	47,8 KB
R2-133288.zip	2013/09/27 9:23	29,3 KB
R2-133289.zip	2013/09/27 9:34	29,4 KB
R2-133290.zip	2013/09/28 3:12	272,9 KB
R2-133291.zip	2013/09/27 9:25	31 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-133294.zip	2013/09/28 3:15	22,7 KB
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R2-133297.zip	2013/09/28 3:17	17,4 KB
R2-133298.zip	2013/09/27 12:51	9,6 KB
R2-133299.zip	2013/09/28 5:47	20,8 KB
R2-133300.zip	2013/09/28 5:49	49,5 KB
R2-133301.zip	2013/09/28 5:53	20,8 KB
R2-133302.zip	2013/09/28 5:55	49,4 KB
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R2-133309.zip	2013/09/27 15:02	185,7 KB
R2-133310.zip	2013/09/27 20:48	21,5 KB
R2-133311.zip	2013/09/27 15:04	9,8 KB
R2-133312.zip	2013/09/27 11:51	153,5 KB
R2-133313.zip	2013/09/27 11:53	31,1 KB
R2-133314.zip	2013/09/28 3:23	24 KB
R2-133315.zip	2013/09/27 11:56	31,4 KB
R2-133316.zip	2013/09/27 11:00	38,7 KB
R2-133317.zip	2013/09/28 3:24	23,3 KB
R2-133318.zip	2013/09/27 11:00	13,3 KB
R2-133319.zip	2013/09/28 3:25	22,6 KB
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R2-133321.zip	2013/09/28 3:28	38,2 KB
R2-133322.zip	2013/09/28 4:21	31,2 KB
R2-133323.zip	2013/09/28 3:30	28,8 KB
R2-133324.zip	2013/09/28 4:25	23,1 KB
R2-133325.zip	2013/09/28 3:31	36 KB

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R2-133329.zip	2013/09/28 3:34	20,1 KB
R2-133330.zip	2013/09/28 3:35	18,9 KB
R2-133331.zip	2013/09/28 3:37	48,8 KB
R2-133332.zip	2013/09/27 16:39	155,8 KB
R2-133333.zip	2013/09/28 3:40	67,8 KB
R2-133334.zip	2013/09/27 16:41	171,5 KB
R2-133335.zip	2013/09/27 12:05	19,3 KB
R2-133336.zip	2013/09/27 22:55	14,7 KB
R2-133337.zip	2013/09/27 22:57	20 KB
R2-133338.zip	2013/09/28 4:30	21,6 KB
R2-133339.zip	2013/09/27 23:38	22,2 KB
R2-133340.zip	2013/09/27 20:50	110,9 KB
R2-133341.zip	2013/09/27 9:26	167,3 KB
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R2-133343.zip	2013/09/27 20:52	44,5 KB
R2-133344.zip	2013/09/27 20:54	63,4 KB
R2-133345.zip	2013/09/27 20:56	358,1 KB
R2-133346.zip	2013/09/27 11:41	102,2 KB
R2-133347.zip	2013/09/27 9:43	40,9 KB
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R2-133354.zip	2013/09/27 11:14	186,6 KB
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R2-133356.zip	2013/09/27 11:15	63,4 KB
R2-133357.zip	2013/09/27 11:15	71,1 KB
R2-133358.zip	2013/09/27 11:16	75,7 KB
R2-133359.zip	2013/09/27 10:10	79 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-133361.zip	2013/09/28 2:33	227,4 KB
R2-133362.zip	2013/09/28 2:36	42,5 KB
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R2-133364.zip	2013/09/27 10:39	134,8 KB
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R2-133366.zip	2013/09/27 20:38	51,2 KB
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R2-133368.zip	2013/09/27 13:05	524,5 KB
R2-133369.zip	2013/09/27 20:40	25,1 KB
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R2-133375.zip	2013/09/27 11:10	56,8 KB
R2-133376.zip	2013/09/27 12:14	139,3 KB
R2-133377.zip	2013/09/27 22:42	123,5 KB
R2-133378.zip	2013/09/28 3:07	207,4 KB
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R2-133380.zip	2013/09/27 11:50	54,2 KB
R2-133381.zip	2013/09/27 11:52	21,2 KB
R2-133382.zip	2013/09/27 11:51	123,6 KB
R2-133384.zip	2013/09/27 11:49	23,8 KB
R2-133385.zip	2013/09/27 22:45	16 KB
R2-133386.zip	2013/09/27 22:49	45 KB
R2-133387.zip	2013/09/27 22:51	257,5 KB
R2-133388.zip	2013/09/27 22:54	198,9 KB
R2-133389.zip	2013/09/27 21:21	9,6 KB
R2-133390.zip	2013/09/27 21:23	8,6 KB
R2-133391.zip	2013/09/27 22:57	106,5 KB
R2-133392.zip	2013/09/27 13:59	104,6 KB
R2-133393.zip	2013/09/27 13:46	21,9 KB
R2-133395.zip	2013/09/28 3:37	70,8 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-133399.zip	2013/09/28 6:31	17,2 KB
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R2-133407.zip	2013/09/28 0:39	44,6 KB
R2-133409.zip	2013/09/28 6:07	16,9 KB
R2-133410.zip	2013/09/28 0:53	22 KB
R2-133411.zip	2013/09/28 6:09	19,6 KB
R2-133412.zip	2013/09/28 5:43	105,6 KB
R2-133413.zip	2013/09/28 6:11	22,1 KB
R2-133414.zip	2013/09/28 6:13	17,7 KB
R2-133415.zip	2013/09/28 6:19	38,8 KB
R2-133416.zip	2013/09/28 0:54	79,1 KB
R2-133417.zip	2013/09/28 6:21	258,6 KB
R2-133418.zip	2013/09/28 6:23	21,5 KB
R2-133419.zip	2013/09/28 0:57	253,4 KB
R2-133420.zip	2013/09/27 15:49	77,3 KB
R2-133421.zip	2013/09/27 16:21	160,3 KB
R2-133422.zip	2013/09/27 16:24	21,8 KB
R2-133423.zip	2013/09/27 14:25	32,5 KB
R2-133424.zip	2013/09/28 0:31	155,3 KB
R2-133425.zip	2013/09/28 0:36	155,3 KB
R2-133426.zip	2013/09/27 16:29	30,2 KB
R2-133427.zip	2013/09/28 0:45	29,4 KB
R2-133428.zip	2013/09/27 14:31	43,6 KB
R2-133429.zip	2013/09/28 0:46	18,8 KB
R2-133430.zip	2013/09/28 0:49	595,3 KB
R2-133431.zip	2013/09/28 5:57	13,8 KB

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R2-133435.zip	2013/09/28 6:51	214,9 KB
R2-133436.zip	2013/09/28 0:08	21,5 KB
R2-133437.zip	2013/09/27 21:12	44 KB
R2-133438.zip	2013/09/27 21:17	86,7 KB
R2-133439.zip	2013/09/28 6:51	48,8 KB
R2-133440.zip	2013/09/27 21:20	109,6 KB
R2-133441.zip	2013/09/28 5:59	22,9 KB
R2-133442.zip	2013/09/27 15:04	45,1 KB
R2-133443.zip	2013/09/27 15:08	22,4 KB
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R2-133445.zip	2013/09/27 15:10	43,7 KB
R2-133447.zip	2013/09/27 15:19	272,1 KB
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R2-133449.zip	2013/10/10 6:41	51,3 KB
R2-133450.zip	2013/09/28 2:12	27,1 KB
R2-133451.zip	2013/09/27 15:26	668,7 KB
R2-133452.zip	2013/09/28 2:12	26,7 KB
R2-133453.zip	2013/09/28 2:13	29,8 KB
R2-133454.zip	2013/09/27 16:57	22,8 KB
R2-133455.zip	2013/09/27 17:49	22,9 KB
R2-133456.zip	2013/09/27 17:51	20,6 KB
R2-133457.zip	2013/09/28 6:50	67,2 KB
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R2-133459.zip	2013/09/27 19:03	53,7 KB
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R2-133461.zip	2013/09/27 18:21	30,7 KB
R2-133462.zip	2013/09/28 5:30	53 KB
R2-133463.zip	2013/09/28 5:59	12 KB
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R2-133466.zip	2013/09/27 17:47	45,8 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-133472.zip	2013/09/28 0:13	23 KB
R2-133473.zip	2013/09/28 6:43	23,1 KB
R2-133474.zip	2013/09/28 7:03	19,5 KB
R2-133475.zip	2013/09/27 22:50	59,8 KB
R2-133476.zip	2013/09/28 0:26	469,3 KB
R2-133477.zip	2013/09/27 19:15	19,9 KB
R2-133478.zip	2013/09/28 5:14	32,1 KB
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R2-133481.zip	2013/09/27 22:45	24,6 KB
R2-133482.zip	2013/09/27 20:36	345,4 KB
R2-133483.zip	2013/09/27 20:40	84,3 KB
R2-133484.zip	2013/09/27 20:44	101,7 KB
R2-133485.zip	2013/09/27 22:03	27,5 KB
R2-133486.zip	2013/09/27 22:00	26,5 KB
R2-133487.zip	2013/09/28 4:20	94,9 KB
R2-133488.zip	2013/09/27 20:49	18,6 KB
R2-133489.zip	2013/09/27 20:53	20,3 KB
R2-133490.zip	2013/09/27 21:57	20,8 KB
R2-133491.zip	2013/09/28 5:11	312,2 KB
R2-133492.zip	2013/09/28 6:48	36,8 KB
R2-133493.zip	2013/09/28 6:38	344,5 KB
R2-133494.zip	2013/09/28 5:55	399,3 KB
R2-133495.zip	2013/09/27 20:57	114,3 KB
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R2-133499.zip	2013/09/28 5:57	158,6 KB
R2-133500.zip	2013/09/28 6:00	122 KB

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R2-133513.zip	2013/09/28 5:21	91,3 KB
R2-133514.zip	2013/09/28 4:05	701,6 KB
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R2-133517.zip	2013/09/27 23:43	149,9 KB
R2-133518.zip	2013/09/27 23:45	210,7 KB
R2-133519.zip	2013/09/27 23:47	334,9 KB
R2-133520.zip	2013/09/27 23:49	32,8 KB
R2-133521.zip	2013/09/27 23:51	153,8 KB
R2-133522.zip	2013/09/27 23:34	109,5 KB
R2-133523.zip	2013/09/27 23:36	29,8 KB
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674 items.

Appendix 23

Agenda Item: 2.2

Source: ETSI MCC

Title: Report of 3GPP TSG RAN WG2 meeting #83bis,
Ljubljana, Slovenia, October 7 - 11, 2013

Document for: Approval

Report of 3GPP TSG RAN WG2 meeting #83bis

held in Ljubljana, Slovenia
October 7 - 11, 2013



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Organisation of the meeting

Meeting:	3GPP TSG RAN WG2 #83bis	
Meeting location:	Ljubljana, Slovenia	
Duration:	Monday 07.10.2013 - Friday 11.10.2013	
Host:	European Friends of 3GPP (EF3)	
TSG RAN WG2 Chair:	Henning Wiemann (Ericsson)	email: henning.wiemann@ericsson.com
TSG RAN WG2 Vice chair:	Diana Pani (Interdigital)	email: diana.pani@interdigital.com
TSG RAN WG2 Vice chair:	SeungJune Yi (LG Electronics)	email: seungjune.yi@lge.com
TSG RAN WG2 MCC Support:	Joern Krause (ETSI MCC)	email: joern.krause@etsi.org
Email reflector:	3GPP_TSG_RAN_WG2@LIST.ETSI.ORG	
Technical documents:	ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_83bis/Docs	
Ad hocs:	Parallel ad hoc held (see agenda item 2.1) on - UTRA (see AIs 8-11, Tue - Thu): chaired by Diana Pani - LTE UP session (see AIs 6.1.2/6.2.2 on Tue, 7.2.3 on Wed afternoon, 7.10.2 on Thu afternoon): chaired by SeungJune Yi	
next meetings:	TSG RAN WG2 #84,	11.11. - 15.11.2013 San Francisco, USA
	TSG RAN #62,	03.12. - 06.12.2013 Busan, Korea
	TSG RAN WG2 #85,	10.02. - 14.02.2014 Prague, Czech Republic

Statistics/Executive Summary

TSG RAN WG2 #83bis was held in Ljubljana, Slovenia, hosted by the European Friends of 3GPP (note: No other 3GPP WGs were co-located). This RAN WG2 meeting had 2 parallel sessions: UTRA session (see agenda items 8-11; Tue - Thu) and LTE UP session (see agenda items 6.1.2/6.2.2 on Tue, 7.2.3 on Wed afternoon, 7.10.2 on Thu afternoon and Annex G). All other topics were treated in the main session.

- 183 participants (registered before the meeting: 199).
- 687 Tdocs allocated with 671 available contributions.
- 18 incoming liaison statements (1 on UTRA, 12 on LTE; and 5 on joint aspects): all of them were treated.
- 14 outgoing liaison statements (1 on UTRA, 7 on LTE; and 6 on joint aspects), 2 of them to be agreed by email.
- 12 email discussions scheduled after RAN2 #83bis (see Annex F).
- REL-12 SI Study on WLAN/3GPP Radio Interworking (AI 5.1): Agreements of RAN2 #83bis are captured in TR 37.834 v1.2.0 (agreed by email discussion [83bis#00] in R2-133736 after the RAN2 meeting). This TR was also provided to SA2, CT1, cc: RAN5 in LSout "CN impacts in RAN2 solutions for WLAN/3GPP radio interworking" in R2-133697 (agreed as well during [83bis#00]).
- REL-12 WI Core part: Hetnet Mobility Enhancements for LTE (AI 7.1):
  A few agreements were made to improve overall HO performance with regard to HO failure rate and Ping-pong. Also improved recovery from RLF (early T310 termination; network-assisted re-establishment) was discussed.
- REL-12 SI Study on Small Cell Enhancements for E-UTRA and E-UTRAN – Higher-layer aspects (AI 7.2): About 20% of all RAN2 #83bis Tdocs were submitted to this topic. Agreements of RAN2 #83bis are captured in TR 36.842 v0.4.0 (agreed in email discussion [83bis#02] in R2-133732). Also a reply LS on security aspects of protocol architectures for small cell enhancements was sent to SA3 cc: RAN3, CT1, SA2 in R2-133650. Furthermore, an email discussion was scheduled until RAN2 #84: [83bis#12] on capturing further evaluation results in TR 36.842.
- REL-12 WI Support for BeiDou Navigation Satellite System (BDS) (AI 7.3 for LTE, AI 10.3 for UTRA):
  For LTE a REL-12 stage 3 CR to TS 36.355 (R2-133716) was in principle agreed.
  For UTRA REL-12 stage 3 CRs to TS 25.306 (R2-133150) and to TS 25.331 (R2-133681) were in principle agreed. RAN2 aspects of these WIs are completed and rapporteurs will inform RAN3 so that RAN3 can complete their parts.

- REL-12 RAN1 WI Core part: Further Downlink MIMO Enhancement for LTE-Advanced (AI 7.4): No contributions.
- REL-12 SI Study on LTE Device to Device Proximity Services (AI 7.5): Agreements were collected in a text proposal to RAN1 TR 36.843: R2-133699 was endorsed by RAN2. This TP was provided in LSout R2-133726 to RAN1.
- REL-12 SI Study on Group Communication for LTE (AI 7.6): Agreements of RAN2 #83bis are captured in TR 36.868 v0.2.0 (agreed by email discussion [83bis#04] in R2-133733 after the RAN2 meeting).
- REL-12 SI Study on Smart Congestion Mitigation in E-UTRAN (AI 7.7): Agreements of RAN2 #83bis are captured in TR 36.848 v0.2.0 in R2-133717. Furthermore, an email discussion was scheduled until RAN2 #84: [83bis#13] on solution candidates for prioritizing VoLTE
- REL-12 RAN1 WI Further Enhancements to LTE TDD for DL-UL Interference Management and Traffic Adaptation (AI 7.8): A couple of first agreements were made in connection with R2-133220.
- REL-12 SI Study on Further EUL Enhancements (AI 10.1): Agreements of RAN2 #83bis are captured in TR 25.700 v0.5.0 (agreed by email discussion [83bis#05] in R2-133734 after the RAN2 meeting).
- REL-12 WI UMTS Mobility enhancements for Heterogeneous Networks (AI 10.2): Several Tdocs were noted but only very few agreements. Also a workplan was proposed in R2-133317.
- REL-12 SI Study on Enhanced Broadcast of System Information (AI 10.4): A skeleton report for this SI was agreed in TR 25.704 v0.1.0 in R2-133679. An email discussion [83bis#15] to capture RAN2 #83bis agreements in a TP to TR 25.704 was scheduled until RAN2 #84. An input for this email discussion was provided in R2-133680.
- Among 139 change requests (CRs) in total: 45 CRs (22 CRs for UTRA 25.xxx specs, 23 CRs for LTE 36.xxx specs, 0 CRs for joint 37.xxx specs) were agreed in principle (4 of the 45 implicitly). They will be (re)submitted to RAN2 #84 for final agreement.

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.

1 Opening of the meeting

TSG RAN WG2 chairman Henning Wiemann (Ericsson) opened the meeting RAN WG2 #83bis on Monday morning 07.10.2013 at 09:00 o'clock.

On behalf of the host, the European Friends of 3GPP (EF3), Marta Martinez Tarradell (Intel) welcomed the delegates to Ljubljana, Slovenia and explained organisational issues.

RAN WG2 meeting rooms in the Grand hotel Union:

Main RAN2 room:	Grand Union Hall (ground floor),	planned for 220 participants, Mon-Fri
RAN2 LTE UP ad hoc room:	White Hall (1st floor),	planned for 80 participants, Tue-Thu
RAN2 UTRA ad hoc room:	Silver Room (1st floor),	planned for 40 participants, Tue-Fri noon*

*: not used on Friday

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 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 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)**

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

R2-133050 Proposed agenda for RAN2 #83bis, Ljubljana, Slovenia, 07.10.-11.10.2013; 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 -> 12:30	[2],[3],[4]		
Mon 14:00 ->	[5.2] Other Joint Rel-12 [5.3] TEI12 Joint [5.1] WLAN/3GPP		
Tue 08:30 -> 16:00	[6.1.1] LTE Rel-8/9/10 **CP** [6.2.1] Rel-11 **CP**	[6.1.2] LTE Rel-8/9/10 **UP** [6.2.2] Rel-11 **UP**	[8] UMTS Rel-6/7/8/9/10 [9] UMTS Rel-11
Tue 16:00 ->	[7.2] SCE Higher Layer		[10.2] HetNet Mobility
Tue ~19:00	*Offline ad-hoc on WLAN inter-working (?)*		
Wed 08:30 -> 10:30	[7.5] D2D		[10.2] HetNet Mobility
Wed 11:00 -> 12:30	[7.7] Congestion Mitigation		[9.4] TEI-11 [10.1] FEUL
Wed 14:00 -> 16:00	[7.1] HetNet Mobility		
Wed 16:30 ->		[7.2.3] SCE-HL (**UP**)	
Wed ~19:00	*Offline ad-hoc (?)*		
Thu 8:30 -> 10:30	[7.3] BeiDou LTE		[10.5] HNB
Thu 11:00 -> 12:30	[7.8] eIMTA		[10.4] SIB enhancements
Thu 14:00 -> 16:00	[7.6] Group Communication		[10.6] TEI12
Thu 16:30 ->	[7.2] SCE Higher Layer [7.10.1] TEI12 LTE **CP**	[7.10.2] TEI12 LTE **UP**	Comebacks [10.3] BeiDou UMTS @ 16:30
Thu ~19:00			
Fri 8:30 ->	Left-overs, Comebacks		Comebacks and leftovers
Fri: 14:00 -> until **16:30**	Left-overs, Comebacks (Joint topics), [12][13][14]		

Offline sessions
The intention is to stop the official LTE CP, UP and UMTS meetings on Tuesday and Wednesday no later than 19:00. If needed, this will allow offline discussions.

2.2 Approval of the report of the previous meeting

R2-133051 Draft report of RAN2 #83, Barcelona, Spain, 19.08.-23.08.2013; ETSI MCC; Report;
CBF: Approval of the report of the previous meeting (MCC)
=> revised in R2-133722 to add a correction from Blackberry
R2-133722 Draft report of RAN2 #83, Barcelona, Spain, 19.08.-23.08.2013; ETSI MCC; Report;
=> Agreed in R2-133723

2.3 Reporting from other meetings

2.3.1 RAN-61

Mandating FGI bits
RAN decided to postpone the RAN2 CRs **mandating FGI #9 (SRVCC to GSM) and #23 (GERAN measurements)**, with the intention to approve them in RAN#62. RAN5 was tasked to prepare the corresponding testing CRs for the two features for RAN#62.
In general, RAN decided that (RAN2-)CRs aiming to mandate FGI bits will be approved **6 months after IOT availability has been declared** in RAN.

Rel-11 Features
Operator survey in RP-131263 was used as an input to decide which Rel-11 feature will be made mandatory.

#	FDD	Proposal	#	TDD	Proposal
1st	CRS interference handling	**Mandatory**	1st	CRS interference handling	**Mandatory**
2nd	Multiple-TA	**Mandatory**	2nd	SS and common channel interference handling	**FFS**
3rd	EPDCCH	**Optional**		DL CoMP with 1 CSI process	**Optional**
4th	SS and common channel interference handling	**Optional**	4th	Multiple-TA	**Optional**
5th	DL CoMP with 1 CSI process	**Optional**	5th	EPDCCH	**Optional**
6th	Wideband RSRQ measurements	**Optional**	6th	Wideband RSRQ measurements	**Optional**

- **Action for RAN2**: Provide REL-11 RAN2 CRs to RAN #62 in Dec.13 to make "CRS interference handling (FDD)", "Multiple-TA (FDD)" and "CRS interference handling (TDD)" mandatory (compare RP-131381).

Additional UE categories
RAN-61 discussed a **proposal to add new UE categories (RP-131162)**:
1) New UE categories to take into account the additional peak rates achievable with 3 DL CA or with other techniques being studied in Rel-12 (e.g. 256 QAM).
2) Decoupling of UL / DL categories to take into account that requirements for DL and UL are not necessarily evolving at the same time and may differ depending on the specific applications.
The proposal was **postponed to RAN#62**.

New Carrier Type
RAN decided to stop NCT work (close current WI) and to continue discussion in RAN on use-cases and requirements for a New Carrier Type in LTE (beyond Rel-12).

Small Cell – Physical Layer
SI was extended of one quarter with the intention to study on the completion of the following areas:
- Higher order modulation, i.e., 256QAM, in the downlink transmission
- Support of semi-static small cell on/off mechanisms for interference avoidance and coordination among small cells adapting to varying traffic

- Further assess the radio interface based inter-cell synchronization.

Small Cell – Higher Layer

SI was extended of one quarter with the intention to complete the evaluation of U-plane architecture solutions for the dual connectivity feature. Priorities and time allocations for the work in RAN2 and RAN3 in the next quarter were agreed in RP-131374.

3GPP/WiFi interworking

SI was extended of one quarter with the intention to allow further convergence. Three solutions have been identified, as summarized in RP-131236 (as defined by RAN2).
RAN agreed the following guidance for RAN2:

- Deployments scenarios **with and without ANDSF** shall be addressed by the SI.
- RAN2 should **communicate with SA2/CT1 once solutions details that may have CN impact** have been worked out sufficiently. By RAN2#83bis meeting RAN2 should identify potential issues with end-to-end solutions to be clarified with SA2/CT1
- The solution for WLAN/3GPP Radio Interworking **should be testable**.
- RAN2 should **complete the work in the Study Item for each of the 3 solutions**.

SI on MTC Signalling enhancements

RAN closed SI on MTC signalling enhancements (see approved SR in RP-131081 and TR in RP-131150). A WI proposal in RP-131356 was noted.

ProSe, GCSE and UPCON

In RP-130924, RAN was requested to inform SA#61 which of the listed features of ProSe, GCSE and UPCON RAN would target to complete in Rel-12. After discussion on existing items as well the approval of new items, RAN endorsed the response document in RP-131335.
RAN endorsed the Public Safety related use-case priorities for Rel-12 in RP-131377. RAN WGs were asked to take these priorities into consideration in their study and design work on LTE Device to Device Proximity Services (LS in RP-131405).

UMTS Heterogeneous Networks

The SI was extended till RAN#62 to close few open study area such as Combined Cells, NAIC and E-DCH decoupling. The TR was approved in RP-131186.
A follow-up **RAN2-led WI was approved** in RP-131348 with focus on mobility improvements: Small cell discovery, high speed UEs, dense small cells, range expansion & Multiflow.

DCH enhancements

The SI was completed and the TR was approved in RP-131344.
A follow-up WI was approved in RP-131357, with focus on DCH enhancements toward UL&DL Frame Early Terminations. RAN2 impact from Q1 onwards.

Scalable UMTS SI

The SI was extended by one quarter to complete the remaining open issues (no RAN2 impact).

Time budget

Details on time budget allocation can be found in RP-131408 (status after RAN-61).
RAN#62 will also discuss the possibility to increase WG processing power to help address more items that are relevant to the industry.

2.3.2 SA-61

(as reported by the RAN chairman)

Rel-12 prioritization for SA2

The Rel-12 prioritization for SA2 was endorsed in the SA work-plan in SP-130506. In essence, SA decided to continue to work on all features with some limited reduction in features' scope and time budget allocation in order to fit all. No hard decisions were made, including for some of the items that the week before had not been approved in RAN#61. This means that those proposals may come back for approval in RAN#62, but at least by that time more progress would be achieved in SA2, so that RAN can make a more informed decision.

UPCON

SA decided that the Rel-12 scope of UPCON would be reduced to a number of sub-features, of which (A) Traffic Differentiation, (C) Congestion Detection and (D) Congestion Reporting (using the classification seen in RP-130925) may require support from RAN, depending on the solution chosen. SA has asked SA2 (in SP-130502) to identify for each of the three sub-features what it wants RAN to do in support in Rel-12, and communicate the results and its latest status on UPCON in time for decision making at RAN#62.

Rel-12 LTE-HRPD SON

Based on the RAN3 feedback (SP-130421), the SA2 CR to add the interface description of E-UTRAN-HRPD Inter-RAT SON was approved (SP-130423).

Reports

TSGs:

- RAN: SP-130470 (pre-report on system level features) and SP-130494 (regular report)
- CT: SP-130461
- GERAN: SP-130425

SA WGs:

- SA1: SP-130409
- SA2: SP-130471
- SA3: SP-130369
- SA4: SP-130344
- SA5: SP-130469

Others

The four LTIs for ITU-R from RAN were approved by SA as well and will be sent to PCG. Final document numbers are: SP-130495, SP-130496, SP-130497, SP-130498 (only SP-130497 was slightly modified by SA)

2.4 Other

Rapporteur changes

Spec	former rapporteur	proposed new rapporteur
25.301	Martin van der Zee (ST-Ericsson)	Martin van der Zee (Ericsson) => Approved
25.306	Martin van der Zee (ST-Ericsson)	Martin van der Zee (Ericsson) => Approved
34.109	Martin van der Zee (ST-Ericsson)	Martin van der Zee (Ericsson) => Approved

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:

Nicola Puddle Work Item on UMTS Heterogeneous Networks

These will be official sessions and agreements may be taken as if they were chaired by a (vice) chairman.

Isolated impact analysis

Note that an isolated impact analysis is required for Rel-11 CRs.
Only corrections where there is a proven problem are allowed for frozen releases (Rel-8 to Rel-11).

Document format

Please remember to provide documents in Word® 2003 format!

RAN2 WG compendium

R2-133052 RAN WG2 compendium v21.0; ETSI MCC; Info; not treated

Latest version can always be found at ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Org/RAN2_Compendium/

3 Incoming liaisons

Note: LSs were moved to the respective agenda items if any.

3.1 Joint UMTS/LTE relevance

Low priority access

R2-133058 Reply LS to S2-132325 on LAPI for NNSF (R3-131606; contact: Huawei); RAN3; LSin; cc: RAN2; NNSF = NAS Node Selection Function; LAPI = low access priority indication; note: S2-132325 was only sent to RAN3 (not to RAN2); REL-12; TEI12, NIMTC-RAN_overload;
=> Noted

High priority terminating calls

R2-133059 Reply LS to C4-130835 = R2-132263 on High Priority mobile terminated calls (R3-131613; contact: Alcatel-Lucent); RAN3; LSin; cc: RAN2; REL-12; TEI12;
=> Noted

SSAC in Connected

R2-133063 Reply LS to R2-133014 on Access control for UEs in RRC CONNECTED mode (S2-133550; contact: NTT DOCOMO); SA2; LSin; to: RAN2; related to CR R2-1313013 of RAN2 #83 which was in principle agreed; REL-12; TEI12, SSAC;
=> Noted

3.2 LTE relevance

RRC/ASN.1

R2-133055 LS on RRC parameter names with and without extension in L1 specs (R1-134009; contact: Ericsson); RAN1; LSin; to: RAN2; REL-11; LTE_CA-Core, LTE_eDL_MIMO-Core, TEI11;
- Samsung thinks that this is in accordance how we use this. Samsung thinks we could provide a quick feedback.

=> CB Today: A draft reply LS on "on RRC parameter names with and without extension" can be provided in R2-133607 (Ericsson)

R2-133607 draft reply LS on "on RRC parameter names with and without extension" to RAN1; Ericsson
✓ => The LS on "RRC parameter names with and without extension in L1 specs" to RAN1 is agreed in R2-133626

EARFCN extension

R2-133054 Reply LS to R2-130875 and R4-124948 = R2-124396 on extending E-UTRA band number and EARFCN numbering space (GP-130844; contact: Renesas); GERAN2; LSin; to: RAN2; REL-11; TEI11, LTE-RF;
- Presented by NSN

=> Noted. We will wait for RAN4 to discuss and reply.

Carrier Aggregation

R2-133060 LS for PCell interruption for SCell activation (R4-134552; contact: CATT); RAN4; LSin; to: RAN2; REL-10; LTE_CA-Core;
=> Related document will be discussed in the UP session.
=> Noted.

Wideband RSRQ Measurements

R2-133053 Reply LS to R4-126987 = R2-130015 on wideband RSRQ measurement (GP-130835; contact: Ericsson); GERAN; LSin; cc: RAN2; REL-11; TEI11, LTE-RF;
=> Noted

CoMP

R2-133061 LS on CoMP interference averaging (R4-134554; contact: Samsung); RAN4; LSin; cc: RAN2; REL-11; COMP_LTE_DL-Core;
=> Noted

UPCON

R2-133057 Reply LS to S2-133070 = R2-132280 on User Plane Congestion (R3-131600; contact: Cisco); RAN3; LSin; cc: RAN2; note: RAN2 answered the LSin R2-132280 from SA2 in R2-133030; REL-12; UPCON;
=> Noted

SDDTE

R2-133067 LS on Mitigating excessive signalling from frequent small data (S2-133860; contact: Ericsson); SA2; LSin; to: RAN2; SDDTE = Small Data and Device Triggering Enhancements; REL-12; MTCe-SDDTE;
- Ericsson suggests to work on a draft reply LS offline during the week. ZTE would like to have some discussion at some time. ALU wonders what a reply we can give considering that there are no input documents. Huawei agrees. Intel would also like to postpone this to the next meeting. LG thinks that the time budget in the next meeting will be tight. LG thinks that this could be discussed in a possible WI.
- ZTE would like to include further details if possible. NSN thinks we should not try to elaborate more on the possible metrics. Ericsson agrees with NSN.

=> CBF: A draft reply LS on "Mitigating excessive signalling" to SA2 can be provided in R2-133608 (Ericsson) which indicates that "parameters to be considered useful require further discussion in RAN2 during a potential WI phase and should therefore be left FFS in the SA2 specifications for the time being". (Ericsson)

R2-133608 Draft reply LS on "Mitigating excessive signalling" to SA2; Ericsson
=> revised in R2-133652

R2-133652 Draft reply LS on "Mitigating excessive signalling" to SA2; Ericsson
- Change second paragraph to "RAN2 previously discussed which kind of assistance information could be useful at the eNB in RAN2#83 and provided a reply in R2-133033. In this meeting RAN2 concluded that parameters require further discussion in RAN2 during a potential WI phase and therefore should not be mentioned in the SA2 specifications for the time being."

✓ => With this change the LS on Mitigating excessive signalling to SA2 is approved in R2-133729

3.3 UMTS relevance

R2-133069 LS on RAN1 input to Further EUL Enhancements TR (R1-134027; contact: Ericsson) RAN1
=> Noted
=> Text proposals will be discussed and possibly agreed in the UTRAN session.

UTRA session:
- Ericsson: TPs from R1-132716, R1-132746, R1-133954 are included in the RAN2 TP discussed over email discussion.

- NSN: for R1-133928 we think that in 5.4.5 we think that the measurements on the secondary are always configured.

=> We will add "If measurements are configured at the end of the sentence" and with this change we agree to the TP in R1-133928 which will be included in TR 25.700

- Ericsson: for R1-133929 we suggest to add simulation assumptions in the Annex.

=> The TP in R1-133929 is agreed and will be added to the Annex of the TR 25.700

4 Joint UMTS/LTE: Rel-11 and earlier releases

Contributions submitted under this agenda item will be handled in a joint UMTS/LTE session.
Corrections to joint LTE+UMTS functionality in Rel-8 to 11. E.g. "Multiple Frequency Bands per Cell", ...
(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)
Also e.g. SONenh2_LTE_UTRA-Core, rSRVCC-GERAN.
Including output of [83#10][Joint/MFBI] Discuss the need for inter-RAT capabilities (Huawei)

MDT

R2-133399 Clarification on MDT data discard; NSN, Nokia Corporation, Huawei, HiSilicon; Disc; REL-11; eMDT_UMTSLTE-Core;
- LG thinks that also 36.331 should be aligned with respect to "shall discard" upon power off or upon detach. DT agrees. Samsung and MediaTek think that there was no security

requirement for the one shot measurements and therefore they don't need to be discarded upon power off and detach. Huawei agree with MediaTek.
- Intel would like to allow the UE to keep it beyond 48 hours in 25.331.

=> Noted

R2-133385 Clarification on MDT Accessibility Measurements discard; Huawei,HiSilicon,NSN, Nokia; CR; 25.331; F; REL-11; eMDT_UMTSLTE-Core;

=> Add in section 13.4.54 of 25.331 that the "UE may keep the information beyond 48 hours".

=> With this change the CR is in principle agreed in R2-133609

Positioning

R2-133131 Corrections to Galileo Assistance Data Elements; Qualcomm Incorporated; Disc; REL-7; LCS_LTE, LCS3-GNSS-UTRAN;

- Intel agrees that something needs to be done (P1/P2).
- Intel thinks that also GERAN needs to be aligned. QC agrees that also GERAN will need to do corrections there but thinks that we decide this here independently and then inform GERAN2.
- NSN thinks that the changes are correct but wonders whether any implementations have been done based on earlier releases. QC agrees that it is a difficult question. QC thinks we should at least clarify in earlier releases that those will not work if implemented.
- Samsung thinks that if we accept that there is no existing implementation, we could make a few better decisions such as having one large IEs rather than combining two smaller fields. QC agrees that this could be considered.
- NSN thinks we could obsolete it in earlier releases and only support of from Rel-12 onwards.
- Ericsson would not like to do any such updates to Rel-7 as it will screw up ASN.1. Ericsson thinks that Rel-12 could be sufficient.

Agreements

1: The assistance data elements in 3GPP specifications (i.e., LPP 36.355 and UMTS RRC 25.331) will be corrected so that the definitions correspond to the latest version of the Galileo ICD.

1a: We should optimize the ASN.1 so that it matches the updated Galileo specification

2: The affected Galileo assistance data elements in LPP 36.355 and in 25.331 will be corrected starting at Rel-12.

3: A note should be added to earlier specifications that the earlier Galileo capable Releases (according to Draft ICD) shall not be used.

- NSN thinks that RAN3 will be impacted as well.

=> CBF: A draft LS on "Corrections to Galileo Assistance Data Elements" to RAN3 and GERAN2 can be provided in R2-133610 (QC)

R2-133610 Draft LS on "Corrections to Galileo Assistance Data Elements" to RAN3 and GERAN2

- Intel would like to state that we decided to correct this from Rel-12 since RAN2 assumes that no UEs implement any of the earlier versions and that there is no market need for an implementation before Rel-12 UEs become available.

=> Add that "RAN2 is aware that the applied corrections are not backwards compatible. However, RAN2 assumes that no UEs implement any of the earlier versions and that there is no market need for an implementation before Rel-12 UEs become available. It was therefore decided to implement the corrections only from Rel-12."

✓ => With this change the LS on "Corrections to Galileo Assistance Data Elements" to RAN3 and GERAN2 is agreed in R2-133653

R2-133133 Correction to Galileo Assistance Data Elements; Qualcomm Incorporated; CR; 36.355; F; cat.A CRs?; REL-9; LCS_LTE;

R2-133134 Correction to Galileo Assistance Data Elements; Qualcomm Incorporated; CR; 25.331; F; cat.A CRs?; REL-7; LCS3-GNSS-UTRAN;

Both not treated

rSR-VCC

R2-133065 Response LS to GP-130562 = R2-131561 on Provisioning of E-UTRA Radio Capabilities in GERAN (S2-133836; contact: Ericsson); SA2; LSin; to: RAN2; R2-131561 was sent from

RAN2 #82 in Fukuoka; REL-11; rSRVCC-GERAN;
[Moved from 3.1 to 4]
LSin: Provisioning of E-UTRA Radio Capabilities in GERAN from SA2 (Chairman)
=> Noted.

R2-133478 Transfer of UE EUTRA capabilities at handover from GERAN; Ericsson; Disc; REL-11; rSRVCC-GERAN;
- NSN wonders what UE capabilities the target eNB may assume regarding PS handover. Category 1? Anything else? Ericsson thinks that nothing else can be assumed. Only if the eNB sees an incoming rSR-VCC handover, it may assume also support for FGI3 and 5.
- Intel thinks that GERAN2 will decide on MFBI in their next meeting.
- Samsung wonders the MFBI proposal would imply that the UE needs to make the band selection rather than the target. Huawei thinks that the eNB should follow the UE selection.
- NSN wonders whether it is essential to support MFBI in this scenario. Ericsson would tend to agree with Intel that we better postpone the MFBI discussion until GERAN agreed on that aspect. Ericsson intended to show how this could be solved.
- DCM wonders why RAN2 is now progressing with this solution. Ericsson thinks that SA2 took the GERAN radio interface limitations as well as CN impact into account and therefore proposed to follow this approach.
- ZTE wonders whether the eNB would have to assume Rel-8? Huawei thinks it is not important to assume a release. Ericsson agrees.

=> RAN2 will adopt the solution recommended by SA2.
- Intel wonders whether already for Rel-10 we might exceed the size limitations. If we support it for PS HO, we should maybe do it from Rel-10. Ericsson thinks that PS HO is different from rSR-VCC as there are no impacts on our specifications. NSN thinks that the eNB needs to know what to expect. Ericsson proposes to capture this in 36.300. NSN wonders whether this will be from Rel-8. Ericsson thinks we don't have a Release for an eNB. Huawei agrees with Ericsson that there is not much need to clarify it in our specifications.

=> We will capture the VoLTE related features to be supported for rSR-VCC in 36.331. A CR can be provided in the next meeting.
=> Discuss which FGIs the eNB may assume for rSR-VCC (3, 5, …?)
=> Can discuss further regarding PS HO support.
=> CBF: A draft reply LS to SA2/CT1/GERAN2 on "Provisioning of E-UTRA Radio Capabilities in GERAN" can be provided R2-133611. It should indicate that UE that support SRVCC GERAN to EUTRA shall support at least Category 1. Should also indicate that we wait for GERAN2's decision on MFBI. (Ericsson)

R2-133611 Draft reply LS to SA2/CT1/GERAN2 on "Provisioning of E-UTRA Radio Capabilities in GERAN"; Ericsson
- Intel thinks we concluded that PS HO requires further evaluation.

=> Change A1 to: "With the adopted solution, a target eNB will assume a minimum set of UE EUTRA capabilities supported by an rSR-VCC capable UE. RAN2 intend to capture in RAN2 specifications the RAN AS features that a "CS to PS SRVCC from GERAN to E-UTRA" capable UE shall support."
=> Change A2 to: " The same solution might be applicable for GERAN to E-UTRAN PS handover but companies felt that a more careful evaluation should be performed."
✓ => With these changes the LS to SA2/GERAN2 on "Provisioning of E-UTRA Radio Capabilities in GERAN" is agreed in R2-133696

R2-133480 Enabling SRVCC and PS HO from GERAN without forwarding UE-EUTRA-Capability; Ericsson; CR; 36.331; B; REL-11; rSRVCC-GERAN;
- NSN would like to capture that this is only for GERAN2 to LTE handover.
- NSN would like to clarify the capabilities so that the eNB knows when to expect capabilities and when it shall not. Ericsson suggests to clarify in 24.008.

=> Clarify the field description of "ue-RadioAccessCapabilityInfo" so that it is clear what is required for which handover (depending on source RAT).
- Samsung is OK with this CR.
- Samsung thinks we should capture this also in 24.008.
- Samsung thinks we have to update stage-2 (36.300).

=> Can provide updated CRs to the next meting also taking into account GERAN decision on MFBI.
=> Postponed

R2-133481 Enabling SRVCC and PS HO from GERAN without forwarding UE-EUTRA-Capability - Alternative for MFBI support; Ericsson; CR; 36.331; B; REL-11; rSRVCC-GERAN;
=> Postponed

R2-133383 UE capability handling during GERAN to EUTRAN mobility; NSN, Huawei, HiSilicon; Disc; REL-8; LTE-L23, rSRVCC-GERAN;
withdrawn

R2-133492 E-UTRA UE Capability size problem in UTRAN and E-UTRAN; NTT DOCOMO, INC.; Disc; REL-11; TEI11, LTE-L23;
=> revised in R2-133602

R2-133602 E-UTRA UE Capability size problem in UTRAN and E-UTRAN; NTT DOCOMO, INC.; Disc
- Sony wonders what is really the problem on the UTRAN. Sony thinks that the network can already tell the UE to omit the E-UTRAN capabilities in the RRCConnectionSetupComplete. DCM would like to do to use RRCConnectionRelease with redirection and therefore they want the UE to send it during the RRC Connection Establishment.
- DCM wonders whether the only problem is delay and not connection failures. DCM also sees an increased risk for failures. Intel thinks that the Connection Setup Complete is sent by RLC AM and losses will be corrected.

=> Companies in RAN2 do not consider the E-UTRA capabilities to be a problem for the UTRAN radio interface. Can discuss further offline.
- NSN thinks that the memory size of the MME is not that critical. Even if the capabilities are 1 kByte per UE, an MME could still serve many UEs with a reasonable amount of memory. NSN is not sure why SA2 raised this issue.
- Huawei think we already replied that we are not able to put a limit on the capability size.
- Ericsson thinks that we should still be careful not to increase the size of the capabilities too much further. We should keep that in mind.

=> Companies do not think the capability size is a real issue for MME implementations. We have not received any reply from CT1 stating any such concerns and we agreed earlier that we do not intend to limit the size of the capabilities.

MFBI

R2-133560 Summary of email discussion [83#10] JointMFBI Discuss the need for inter-RAT capabilities; Huawei; Report; result of email discussion [83#10]; REL-9; TEI9, LTE-RF;

Proposal 1: MFBI capability signalling is introduced for inter RAT case
Proposal 2:
- UMTS: introduce a capability bit to indicate LTE MFBI support from Rel-10;
- LTE: introduce a capability bit to indicate UMTS MFBI support from Rel-9

- QC thinks that in the UMTS network the capability would not yet be known when the UE wants to perform a Reject. Huawei and Sony thinks that the problem QC raises is not specific to MFBI.

=> Noted

Agreements
1 MFBI capability signalling is introduced for the inter RAT case
2a UMTS: introduce a capability bit to indicate LTE MFBI support from Rel-10;
2b LTE: introduce a capability bit to indicate UMTS MFBI support from Rel-9
3 RAN2 acknowledges that there might be problems with Reject and Redirect in case the UE does not support MFBI while the target cell uses MFBI. However, no solution to this problem could be identified.

R2-133564 Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators; Huawei, HiSilicon; CR; 25.331; F; related to email discussion [83#10]; REL-10; TEI10,LTE-RF ;
- Huawei indicates that ASN.1 corrections are needed and will update the CR accordingly (back-porting capabilities to earlier release).
- Sony thinks it would be good to see also a Rel-11 CR.
- NSN wonders whether we really need to do this in Rel-10. Ericsson thinks that maybe a Rel-11 CR with magic sentence would also be enough. Then we would not need to mess around with extending Rel-10 ASN.1. Huawei would also be OK with that if companies

want to avoid dummies in Rel-10 and if we are sure that it can be done. Sony think that it would be the typical way for band-related functionality.
=> An updated Rel-11 CR with magic sentence can be provided R2-133612 (Rel-10) and R2-133613 (Rel-11).
- If the UE supports LTE MFBI it should also indicate this in the UMTS capabilities.

R2-133612 Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators; Huawei, HiSilicon; CR; 25.331; F; related to email discussion [83#10]; REL-10; TEI10,LTE-RF ;
=> Adjust the inter-operability to the structure: "If the UE is implemented according to this CR but the NW is not…"
- Nokia and NSN wonder why we need a new capability bit given that the feature is mandatory from Rel-10 anyway. Huawei thinks that there will also be Rel-9 LTE UEs that intend to use this feature.
=> With this change the CR is in principle agreed in R2-133654

R2-133613 Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators; Huawei, HiSilicon; CR; 25.331; A; related to email discussion [83#10]; REL-11; TEI10,LTE-RF ;
=> With the same change the CR is in principle agreed in R2-133655

=> Can discuss until next meeting whether 25.307 requires updates for inter-RAT MFBI capabilities.

R2-133565 Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators; Huawei, HiSilicon; CR; 25.306; F; related to email discussion [83#10]; REL-10; TEI10,LTE-RF ;
- Sony thinks that it should clarify that it is only applicable if the UE supports E-UTRA.
=> Clarify that this only applies for a UE supporting E-UTRA.
=> CBF: An updated inter-RAT MFBI for 25.306 CR can be provided in R2-133614 (Rel-10), R2-133615 (Rel-11) (Huawei)

R2-133614 Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators; Huawei, HiSilicon; CR; 25.306; F; related to email discussion [83#10]; REL-10; TEI10,LTE-RF ;
=> Adjust the inter-operability to the structure: "If the UE is implemented according to this CR but the NW is not…"
=> Add magic sentence
=> With these changes the CR is in principle agreed in R2-133656

R2-133615 Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators; Huawei, HiSilicon; CR; 25.306; A; related to email discussion [83#10]; REL-11; TEI10,LTE-RF ;
=> With the same changes the CR is in principle agreed in R2-133657

R2-133561 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.331; F; related to email discussion [83#10]; REL-9; TEI9, LTE-RF;
- Ericsson points out that one OPTIONAL is missing.
=> Discuss how to place the OPTIONAL bits
=> Discuss whether to better place this in the inter-RAT capabilities
=> CBF: An updated 36.331 CR can be provided in R2-133616 (Rel-9), R2-133617 (Rel-10), R2-133618 (Rel-11) (Huawei)

R2-133616 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.331; F; related to email discussion [83#10]; REL-9; TEI9, LTE-RF;
=> Adjust the inter-operability to the structure: "If the UE is implemented according to this CR but the NW is not…"
=> With this change the CR is in principle agreed in R2-133658

R2-133617 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.331; A; related to email discussion [83#10]; REL-10; TEI9, LTE-RF;
=> With the same change the CR is in principle agreed in R2-133659

R2-133618 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.331; A; related to email discussion [83#10]; REL-11; TEI9, LTE-RF;
=> With the same change the CR is in principle agreed in R2-133688

R2-133562 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.306; F; related to email discussion [83#10]; REL-9; TEI9, LTE-RF;
=> Clarify that this only applies for a UE supporting FDD UTRA.
=> Align according to the decision of where to place the corresponding IE in 36.331.

=> CBF: Updated 36.306 CR can be provided in R2-133619 (Rel-9), R2-133620 (Rel-10), R2-133621 (Rel-11) (Huawei)

R2-133619 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.306; F; related to email discussion [83#10]; REL-9; TEI9, LTE-RF;
=> Adjust the inter-operability to the structure: "If the UE is implemented according to this CR but the NW is not…"
=> With this change the CR is in principle agreed in R2-133689

R2-133620 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.306; A; related to email discussion [83#10]; REL-10; TEI9, LTE-RF;
=> With the same change the CR is in principle agreed in R2-133690

R2-133621 Introduction of capability bit for UTRA MFBI; Huawei, HiSilicon; CR; 36.306; A; related to email discussion [83#10]; REL-11; TEI9, LTE-RF;
=> With the same change the CR is in principle agreed in R2-133691

- ZTE wonders what we do about GERAN. Huawei thinks we should inform GERAN2
=> CBF: A draft LS on Inter-RAT capability signalling for MFBI to GERAN2 can be provided in R2-133640 (Huawei).

R2-133640 draft LS on Inter-RAT capability signalling for MFBI to GERAN2; Contact Huawei
✓ => The LS on "Inter-RAT capability signalling for MFBI" to GERAN2 is agreed in R2-133692

R2-133076 Further corrections on MFBI related issues; Huawei, HiSilicon; CR; 25.331; F; REL-10; TEI10, LTE-RF;
- Sony wonders whether the UE may rely on a certain NW behaviour? If so, should we specify this? Sony thinks that in case of NW sharing one of the overlapping bands could have a different dedicated priority than another. Huawei thinks that for LTE we decided not to write this explicitly in the specifications even though the NW is expected to provide the same dedicated priorities.
- Ericsson wonders why the text was introduced as notes. It should be procedural text.
=> Change notes to normative text.
=> Remove the references to the earlier agreed CRs (R1, R2).
=> Correct editorials on cover page
=> Change "i.e. regardless of the ARFCN" to "i.e. independent of the ARFCN"
=> CBF: An updated CR can be provided in R2-133622 (Rel-10) (Huawei)

R2-133622 Further corrections on MFBI related issues; Huawei, HiSilicon; CR; 25.331; F; REL-10; TEI10, LTE-RF;
- Intel wonders why the note was not converted into normative text. Huawei indicates that some companies had concerns. Intel thinks it is normative in LTE specifications.
=> Change notes to normative text
=> With this change the CR is in principle agreed R2-133693

R2-133077 Further corrections on MFBI related issues; Huawei, HiSilicon; CR; 25.331; A; REL-11; TEI10, LTE-RF;
=> CBF: An updated CR can be provided in R2-133623 (Rel-11) (Huawei)

R2-133623 Further corrections on MFBI related issues; Huawei, HiSilicon; CR; 25.331; A; REL-11; TEI10, LTE-RF;
=> With the same change (like for the REL-10 CR above) the CR is in principle agreed R2-133694

5 Joint UMTS/LTE: Rel-12

Note that, according to work item approval and time budget discussions at RAN-58, RAN2 is not expected to work on other (e.g. RAN1- or RAN3-led) Joint Rel-12 WIs than those listed in the following sub-sections.

5.1 SI: WLAN/3GPP Radio Interworking

(FS_UTRA_LTE_WLAN_interw, leading WG: RAN2, REL-12, started: Dec.12, target: Sep.13, WID: RP-122038)
TR 37.834 v0.3.0 (R2-132249)

Guidance from RAN-61:

- *Deployments scenarios with and without ANDSF shall be addressed by WLAN/3GPP Radio Interworking SI*
- *RAN recommends that RAN2 communicate with SA2/CT1 once solutions details that may have CN impact have been worked out sufficiently.*
- *By RAN2#83bis meeting RAN2 should identify potential issues with end-to-end solutions to be clarified with SA2/CT1*
- *The solution for WLAN/3GPP Radio Interworking should be testable*
- *RAN2 should complete the work in the Study Item for each of the 3 solutions*

R2-133476 TR 37.834 v1.0.1 on Study on WLAN/3GPP Radio Interworking; Intel Corporation; TR; 37.834;
=> Update is agreed in R2-133627 v1.1.0

R2-133474 Next steps for WLAN/3GPP radio interworking SI; Intel Corporation; Disc;
- QC thinks that for solution 3 the behaviour is clear and the options are clear. For solution 1, however, there is only a list of input parameters but not description of how they should actually be used. IDT thinks that also for solution 3 there are difference between the solutions proposed by QC and Huawei.
- Huawei thinks we need to investigate and describe how Solution 1 works without ANDSF.

=> Noted

Interworking with ANDSF
Primarily for Solutions 2&3

R2-133100 Clarifying RAN and ANDSF based WLAN interworking; Qualcomm Incorporated; Disc;
=> Noted

R2-133192 The details of WLAN IW Solution 2; NSN, Nokia Corporation, Deutsche Telekom; Disc;
- NSN indicates that the WTSI and the RSRP threshold could be merged (WTSI could be realized by RSRP threshold). Vodafone thinks the WTSI is not needed.
- Discuss how ANDSF can take precedence over the RAN rules for selected traffic.

=> Noted

R2-133442 Interworking of RAN solutions 1, 2 and 3 with ANDSF; Huawei, HiSilicon; Disc;
=> Noted
=> Solution 2 and Solution 3 can use the same ANDSF interworking.

Working assumption
In Solution 2 and 3 the RAN rules/steering can restrict access network availability. E.g., if ADNSF allows two accesses the RAN rules/steering may indicate any of the two as not available – even the one for which ANDSF indicated higher priority.
=> Text should be improved… maybe by just adopting the already agreed text for Solution 3 in the TR.

- Huawei thinks that Solution 3 would be primarily for Connected more whereas Solution 2 could be used for IDLE mode.
- Ericsson suggests that we work on these detail offline during the week and come up with a flow chart describing how it works.
- MediaTek thinks we assumed that the RAN does not know the UEs ANDSF configuration.

R2-133200 Interaction between ANDSF policies and RAN policies; Vodafone; Disc;
R2-133440 RAN-ANDSF Interworking; Ericsson; Disc;
Both not treated

Offloading granularity
Primarily for Solutions 2&3

R2-133233 CN impacts of RAN2 solutions for WLAN/3GPP interworking; Samsung; Disc;
R2-133234 Draft LS on CN impacts in RAN2 solutions for WLAN/3GPP interworking; Samsung; LSout;
Both not treated

- Intel thinks that the majority of companies would prefer APN level offload for Solutions 2 and 3 as discussed offline. DT would like finer offloading such as bearer level. QC thinks

that the RAN only knows bearers. Huawei thinks that on WiFi the UE does not know bearers. It only knows APNs and IP Flows. Huawei thinks that the RAN could indicate all bearers that belong to one APN. The RAN would need to know the APNs. Ericsson thinks the UE would need to know which bearers not to offload.

- Samsung would like to avoid additional complexity in the UE. Samsung agrees with Intel that we should agree to support per-APN level offloading and discuss the signalling later in the WI phase. MediaTek would support the intention and assumes that the intention is to steer IMS and non-IMS traffic separately. Samsung thinks that the Emergency and IMS APN should never move to WiFi. But the best effort could be moved. DT would require finer granularity than per-APN. Vodafone thinks that that can be done by using ANDSF with IFOM.
- Chairman thinks that the intention is to ensure that the UE does not DETACH which would happen if all traffic is offloaded to WiFi.
- TI agreed with DT that we should try to have finer granularity even if ANDSF is not available. Vodafone thinks we should not support any traffic differentiation unless ANSDF is used.
- Huawei thinks that we need at least per APN offload since there will be traffic that cannot be offloaded to WiFi (e.g. IMS depending on interworking solution)
- Intel thinks that we should agree on this baseline.

Show of hands: For the case that ANDSF is not present we intend to support…
a) per bearer offload: 6 companies
b) per APN offload: 12 companies
c) per UE offload: 7 companies

- DT thinks we cannot exclude any of the options now.

Agreements
1 If ANDSF is not present, we could use traffic routing (e.g. per APN or per bearer) to keep certain traffic on LTE to ensure that the UE does not DETACH. The level of traffic routing is FFS and should be checked with SA2.
2 If ANDSF is not present and only per-UE offloading is supported, there should be means to ensure that the UE does not DETACH (in case of LTE). It is FFS how this could be achieved.

=> We will ask SA2 whether any other alternative than per-APN offload would be feasible in Rel-12.

Predictability and Testability
Primarily for Solution 1, How are the parameters used? What are the rules? (also for solution 2)

R2-133426 Open issues of solution 1; NEC; Disc;

- MediaTek thinks that many companies think that radio thresholds should be used and that should be specified with a certain purpose in mind. The usage should not differ between Solution 1 and 2. ALU agrees that rules could be provided in either way.
- MediaTek thinks we should specify the thresholds and the usage of the thresholds (rules) in RAN2.
- MediaTek thinks that ANDSF is a kind of baseline and if there are problems with testing, we need to solve it. MediaTek thinks that even if ANDSF offers a very flexible functionality, we might decide to specify tests that cover only a subset of functionality which is considered most important. MediaTek thinks that we should not try to replace ANDSF just because there are currently no test cases. We should rather specify the test cases. AT&T agrees to that. Orange also agrees.
- Nokia thinks that there were attempts to agree test cases for ANDSF but it was not agreeable. Nokia thinks that we should check with SA2 and CT1 whether they intend to cover ANDSF by test cases. Huawei thinks that ANDSF cannot be tested as everything is specified as “UE may…”. That is why Huawei would prefer to specify at least the RAN related aspects in RAN specifications. TI thinks we should make sure that RAN5 tests it.
- Ericsson is concerned that the local operation environment concept makes it even more difficult to predict the ANDSF behaviour.
- Intel thinks that the broadcast load should be compared to a threshold. Intel thinks that it could be randomized to avoid ping pong. AT&T agrees. NSN does not want to broadcast

the cellular load. NSN wonders what granularity would be considered. NSN would rather like to use an offload preference. Ericsson thinks we should rather achieve this by RSRP thresholds. Orange thinks that different operators have different requirements and might want to use different parameters. Orange would not like to broadcast the load of their NW but if other operators like to do that, they could. Vodafone agrees with Ericsson that we should rather focus on things as RSRP and other thresholds where it is clear how the UE uses it. Vodafone would also not like to broadcast the load of the NW. MediaTek tends to agree with Ericsson that it is important to define rules that ensure predictability. This applies to Solution 1 and 2.

- Intel thinks that we don't need to discuss the rules but just make to be sure that test cases can be defined.

=> We should describe intended UE behaviour for Solution 1 and 2.

- Huawei could like to ask CT1 whether a UE without user preference and with a Local Operating Environment which does not preclude any access network, the UE shall behave as described above. Intel think that an answer would not help since we should anyway support ANDSF.

=> We can indicate in the LS to SA2/CT1 that all solutions are supposed to be testable and since they are supposed to interwork with ANDSF, RAN2 thinks that also the ANDSF functionality should be testable.

R2-133438 WLAN 3GPP radio interworking-UE predictability and testability; Ericsson; Disc;
R2-133473 Further description and text proposal for solution 1; Intel Corporation; TP; 37.834;
Both not treated

Measurements and other Traffic Steering Metrics

Generally important aspects not specific to one solution

R2-133157 Limitations on WLAN measurements for WLAN/3GPP Radio Interworking; Broadcom Corporation; Disc;

- Ericsson thinks that from Broadcom's evaluation it seems that the measurements are actually pretty accurate. Broadcom thinks that other chipsets could be much worse. Nokia also agrees that the measurements look quite good but the problem is that there are no requirements. BlackBerry thinks we should not make any assumptions on the WiFi radio interface side.
- AT&T wonders whether it only depends on the chipset?
- TI wonders whether there is any chance to specify measurement accuracy in IEEE. Orange thinks that this might happen as part of carrier grade WiFi activities.
- NSN think that SA2 and WiFi alliance have not considered RSSI measurements. Ericsson indicates that this is not really in SA2s scope so far since they focus on higher layer aspects.
- MediaTek thinks that the main problem is actually interference. So, we may need to decide whether we need filtering.
- Nokia thinks that the testability requirement applies also to this aspect and Nokia wonders how we can test this without having requirements.

Agreements

1 If RAN2 decides to develop WLAN measurement solutions, RAN2 should take into account the lack of control over WLAN radio sensitivity calibration and WLAN measurement performance requirements.
2 If WLAN radio signal/quality thresholds and/or measurements are introduced, the granularity should match the accuracy to be expected (e.g. just a few levels that are likely to be distinguished correctly by typical WLAN implementations)
3 Testability should be evaluated further.

Performance evaluation

R2-133479 Performance benefits of RAN based solutions for WLAN/3GPP interworking; Intel Corporation; Disc;
=> revised in R2-133604
R2-133604 Performance benefits of RAN level enhancements for WLAN/3GPP interworking; Intel Corporation; Disc

- LG thinks that estimated throughput is used as steering metric which many companies raised concerns about. LG would not like to make conclusions based on such a metric. NSN agrees with LG that we have not discussed this threshold parameter. Intel indicates that this is not mentioned in the text to be captured. NSN thinks that this is what the results are based on.
- NSN wonders what the benefit is of capturing this is. Intel thinks it is a nice conclusion of the study and good to show to SA2 and others. Intel clarifies that the intention is not to steer the selection of a solution with these results. It is just supposed to be one particular result for one particular deployment and configuration.
- Intel would also be fine not to capture the results in the TR and only agree on proposal 1 and 2. Nokia wonders whether we should really make this conclusion based on this simulation which seems to assume very specific parameters. Intel thinks that even without these simulations we could probably conclude proposal 1 and 2.
- TI thinks that we should such a conclusion at a later point in time when we really wrap up the SI. TI also thinks that this statement is not really important for SA2 now.

=> Postpone the conclusion on performance… should be considered in the next meeting.

- AT&T supports having a joint meeting with SA2 and CT1 in San Francisco. BlackBerry would support this as well. Cisco agrees.

=> CBF: A draft LS to SA2 and CT1 on WiFi 3GPP interworking capturing the questions collected above can be provided in R2-133628 (Intel)

=> Intel will provide a draft LS which can be discussed in the offline evening session on Tuesday evening.

R2-133628 Draft LS to SA2 and CT1 on WiFi 3GPP interworking; Contact: Intel

=> In the first paragraph change to “three solution directions which”

=> Remove “if services may be better performed in another access”

=> Change to “testable UE behaviour?”

=> Change “Is it feasible to develop testable requirements for ANDSF to ensure consistent UE behaviour?” to “If not, is it feasible to develop testable requirements for ANDSF to ensure consistent UE behaviour? When could that be achieved?”

- Nokia suggests to ensure a focused LS by removing “RAN2 seek SA2 input on CN impacts of identified RAN solutions and questions as described above.”. BlackBerry, IDT and AT&T would like to keep it.
- DT wonders what roaming is referred to in Q4. Vodafone thinks it is “Wifi roaming”. Intel thinks it refers to “3GPP roaming”. DT suggests to remove the sentence. Orange thinks it is unclear now whether this refers to ANDSF or other cases.

=> Change Q4 to “Question 4) Is there an issue with RAN rule/command affecting access network selection decision in case of cellular roaming (user in VPLMN configured by Home PLMN with ANDSF)?”

- NSN thinks that the sentence is very wide. Ericsson agrees that we have maybe not even defined the solutions detailed enough so that they could answer this. Intel and Huawei also prefer to remove the sentence.

=> Remove “RAN2 is interested in SA2 input on CN impacts of identified RAN solutions and questions as described above.”

✉ **[Joint/Wifi] One week email discussion [83bis#00] to approve the LS to SA2 and CT1 (Intel)**
- The intention is to clarify the text (so that it becomes understandable from SA2/CT1 point of view) but not to add or remove questions. The final LS can be provided in R2-133697

- MediaTek thinks that the solutions are actually quite similar and companies should try to have a mind set to find commonalities of the solutions.

Possible Way Forward

Not the main focus in this meeting but good to keep in mind

R2-133171 Standardization Issues for WLAN/3GPP Radio Interworking; CMCC; Disc;
R2-133102 Benefits of UE reporting for WLAN interworking in Solution 3; Qualcomm Incorporated; Disc;
R2-133544 UE based vs Network based Solution; MediaTek Inc.; Disc;
R2-133101 A combined approach to Solution 1 and 2 for Idle mode; Qualcomm Incorporated; Disc;

R2-133490 Solution supporting deployment with and without ANDSF; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, AT&T, InterDigital Communications; Disc;
R2-133545 Differences and Similarities Solutions 1 & 2; MediaTek Inc.; Disc;
All 6 Tdocs not treated

Other

R2-133144 Discussion on three solutions for access network selection; ZTE; Disc;
R2-133151 The Discussion on Solution 1 and 3; Coolpad; Disc;
R2-133167 Steering of data radio bearers; Acer Incorporated; Disc;
R2-133158 IDC issues on WLAN measurements for WLAN/3GPP Radio Interworking; Broadcom Corporation; Disc;
R2-133172 Considerations on WLAN/3GPP Radio Interworking; CMCC; Disc;
R2-133202 Support for Traffic Offloading for IDLE Mode UEs; AT&T, InterDigital Communications; Disc;
R2-133240 Next Steps on WLAN/3GPP Interworking; Motorola Mobility; Disc;
R2-133286 Three Solutions with and without ANDSF; CATT; Disc;
R2-133288 Removal of FFS in Solution 3; CATT; Disc;
R2-133291 CN Impact of Three Solutions; CATT; Disc;
R2-133340 RAN assistance on ANDSF information provisioning; Renesas Mobile Europe Ltd.; Disc;
R2-133361 Impact analysis for solution 2; LG Electronics Inc.; Disc;
R2-133362 Text proposal on WLAN 3GPP radio interworking solution 2; LG Electronics Inc., Kyocera, Acer Incorporated; TP; 37.834;
R2-133421 Simplified solution 3; NEC; Disc;
R2-133432 WLAN/3GPP Radio Interworking Impacts to Core Network for Discussion with SA2/CT1; AT&T - InterDigital Communications; Disc;
R2-133436 Draft LS on WLAN/3GPP Radio Interworking Issues for Clarification; AT&T; LSout;
R2-133437 WLAN 3GPP radio interworking-TP for solution 2; Ericsson; TP; 37.834;
R2-133451 How solutions 1, 2 and 3 work without ANDSF; Huawei, HiSilicon; Disc;
R2-133445 Dedicated signalling for solutions 1 and 2; Huawei, HiSilicon; Disc;
R2-133462 End-to-end issues in WLAN 3GPP Radio Interworking Solutions; BlackBerry UK Limited; Disc;
R2-133463 Draft LS on end to end issues with regard to WLAN 3GPP Radio Interworking; BlackBerry UK Limited; LSout;
R2-133470 WLAN measurement for solution 3; Acer Incorporated; Disc;
R2-133506 Clarification of RAN rule and ANDSF policy in Solution 2; Kyocera, LG Electronics Inc., Acer Incorporated; Disc;
All 23 Tdocs above not treated

Text Proposals

R2-133648 Text Proposal on WLAN/3GPP radio interworking solution 1; Intel Corporation, Samsung, AT&T, InterDigital Communications, Alcatel-Lucent, KDDI, Broadcom, Cisco, Mediatek, Blackberry; TP 37.834
- DT thinks that the text gives the impression that the cellular load has been agreed to be included.

=> Change to “enhanced with e.g. the following RAN parameters”
- TI would like to put some of the text into the actual description rather than just in the illustrative description. TI would like to have an email discussion.

=> With this change the TP is agreed in R2-133698

R2-133649 Text Proposal on WLAN/3GPP radio interworking solution 2; Intel TP 37.834
- Orange would like to use the other solution 2 TP instead which was co-signed by many companies. NSN would support that.

=> Remove: “If ANDSF is present, the UE will not move traffic to an access network not indicated by ANSDF as a possibility (i.e. not indicated or indicated as forbidden).”
=> Remove “for certain IP flows”
=> merged into R2-133725

R2-133721 TP for RAN and ANDSF based WLAN interworking; Orange, Deutsche Telekom, Vodafone, Teliasonera, LGE, Acer, Kyocera
- Intel thinks this seems to mandate a certain UE implementation and it should be clarified that this is an illustration.

=> Change to “Below flowcharts are an illustrative representation of the steps performed”
=> Change “e.g. according to ANDSF or provided by RAN” to “e.g. according to ANDSF or, if ANDSF is not present, provided by RAN”

✉ **[Joint/WiFi] One week email discussion [83bis#01] on TP to TR 37.834 for RAN and ANDSF based WLAN interworking (Orange)**
- final version can be provided in R2-133725

Late or withdrawn

R2-133444 How solutions 1, 2 and 3 work without ANDSF; Huawei, HiSilicon; Disc; see R2-133451 instead;
withdrawn

R2-133586 Discussion on details of solution 1; Renesas Mobile Europe Ltd.; Disc;
[Late]
withdrawn

5.2 Other Joint Rel-12 WIs/SIs

Input to any other Rel-12 Joint UMTS/LTE WIs/SIs not explicitly listed above. Note that TEI12 should be submitted in 5.3.
(EHNB_enh3-Core, leading WG: RAN3, REL-12, started: Sep.12, target: Dec 13, WID: RP-130741)

EHNB_enh3-Core

R2-133298 Draft LS on Agreements Related to CSG RAN Sharing; TeliaSonera; LSout; REL-12; EHNB_enh3-Core;
- ZTE wonders whether there is anything missing in RAN3 or SA2 specifications. TS thinks that there is a SA2 TR which explains possible ways to implement and TS thinks it would be helpful to include it in that one at least. ZTE thinks that the "mechanism" outlined in the draft LS seems to describe pure NW implementation option. ZTE does not think this needs to be described in specifications. ZTE thinks that this should be discussed in RAN3. It is not our task to tell RAN3 how to do this. Huawei thinks that there would be no harm sending this LS. NSN thinks we should send an LS if there is a need for it.
- QC thinks we should not go into details. If we want to send an LS we could just indicate that it should be taken care of by proper NW configuration.
- Chairman thinks we did not discuss the solution but rather confirmed that it would in general be possible to cope with pre-release 12 UEs.

=> No need to send an LS.
=> Not agreed

UEPCOP

R2-133068 Reply LS to R2-133034 on UEPCOP considerations (S2-133863; contact: Ericsson); SA2; LSin; LS01; to: RAN2; UEPCOP = UE Power Consumptions Optimizations; FS_MTCe_RAN was completed in Sep.13; NSN drafted a reply in R2-133194 and ZTE discussed a reply in R2-133563; REL-12; MTCe-UEPCOP, FS_MTCe_RAN;
[Moved from 3.1 to 5.2]
- ALU wonders whether we should treat them at all or just reply to SA2 in the way we agreed for SDDTE (further study is needed but no time allocated now). ZTE thinks that here we have some documents on the table with some suggestions. NSN thinks that all we could do is to conclude that no gains are to be expected. Intel would support to discuss it briefly. Vodafone would prefer to conclude that this is not feasible for Rel-12.

=> Noted; see R2-133625 for a draft LS reply

R2-133563 Considerations for a Reply LS to SA2 on MTCe-UEPCOP; ZTE Corporation; Disc; LS01; Considerations for a possible Reply LS to R2-133068 = S2-133863; REL-12; FS_MTCe_RAN;
=> Noted

R2-133193 Further analysis of extended DRX cycle for UEPCOP; NSN, Nokia Corporation; ?; REL-12; FS_MTCe_RAN;
[Moved from 5.3 to 5.2]
=> Noted

Discussion:
- Vodafone thinks the longer DRX cycle would delay transmission of SMS to the UE.

- Sony thinks that the answer that ZTE proposes seems more correct, i.e., it does not come for free but it could be feasible when we can avoid SIB1 reading. NSN wonders how that would be possible. QC agrees with ZTE and Sony that we could make it work for up to 10.24 seconds in Rel-12. NSN would like to agree that beyond 10.24 is not feasible for Rel-12. MediaTek agrees with QC and Sony that up to 10.24 would be feasible for Rel-12. Intel agrees with QC.
- Samsung would agree with ZTEs response but think that even extending beyond 10.24s would be feasible in Rel-12.
- ALU wonders what power saving we expect from extending the cycle up to 10.24.
- Huawei agrees that extending up to 10.24 might actually consume more power.
- IDT think that we could adopt up to 10.24. Nokia thinks we don't know all aspects. E.g. how frequently would a UE need to do measurements.
- QC thinks that for UMTS it would be reasonable to extend DRX cycles up to 40s and that seems to result in power saving. NSN thinks that in UMTS we can already support 5s. Huawei thinks we would have the same issue as for LTE if we extend the cycle further as UEs would need to read SIB. QC would at least like to reply that also UMTS would require further evaluation.

=> We reply that "Further evaluation would be needed to evaluate the UE power consumption for extended DRX cycles up to and beyond 10.24s which could not be achieved in the Rel-12 SI".
=> CBF: A draft reply LS on UEPCOP to SA2 can be provided in R2-133625 (ZTE)

R2-133625 Draft reply LS on UEPCOP to SA2; Contact: ZTE
=> Reply that "RAN2 would need to further evaluate the power consumption saving achievable with extended DRX cycles up to and beyond 10.24s. But currently RAN2 has no time budget allocated to perform this evaluation. RAN2 thinks that, considering the current workload, specifying RAN aspects for extended DRX cycle values beyond 10.24s may not be feasible in the Rel-12 timeframe. Therefore, RAN2 did not discuss whether enhancements to the RRC system information would be needed or not, in case DRX cycle values were extended."
✓ => With these changes the LS on UEPCOP to SA2 is agreed in R2-133695

R2-133194 [DRAFT] Reply LS on UEPCOP considerations; NSN; LSout; LS01; draft reply LS to R2-133068 = S2-133863; REL-12; FS_MTCe_RAN;
not treated

5.3 Joint TEI12

Small Technical Enhancements affecting LTE and UTRAN Rel-12 and that do not belong to any Rel-12 WI.
Note: A TEI proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

RACH

R2-133159 RACH access failure problems: 'aggressive RACH' and 'Chiba' issues.; Sony; Disc; REL-11; TEI11;
[Moved from 4 to 5.3]
- DT has also observed the same Chiba problem in their E-UTRA network not only in UTRA.
- DT supports addressing these issues.
- AT&T would also support this
- Nokia thinks that in the last meeting we concluded that we should get some measurements showing what the actual problem for aggressive RACH. Samsung thinks the same applies for the Chiba problem where the root cause was not yet clear. Ericsson agrees that for Chiba there could also be a propagation delay problem. The aggressive RACH seems to be due to overload. DT thinks that the Chiba problem happens primarily due to limited UL power in low frequency bands. Sony thinks that it could be UL power or delay and we should find a solution to both. For the UE it is the same effect.

Chiba:
- Samsung thinks that DCM has mainly talked about the delay issue and that can be addressed on the NW side. If it is UL coverage, one might need a different solution but we should make sure we really understand the issue before designing a new solution. DCM confirms that in their case the problem was large delay. DCM think they cannot solve that

by NW configuration. DCM would need to know from the UE that the problem happened and could then configure the NW accordingly.
- DT thinks that we need something in addition to the NW configuration.
- NEC would like to see more evaluations of the root cause of the issue.
- Ericsson thinks that it is not only about RA response window but also that the preamble is received too late in the eNB.
- DT thinks that limited UL power needs to be addressed.
- LG thinks one should primarily consider MDT to find where these problems happen and then aim to fix it by NW configuration. DT thinks that today it is actually so that customers complain directly.
- MediaTek thinks that the proposals here are quite generic and could agree to try to adopt them.
- Samsung thinks that the company that brought up the problem does not see a need anymore for a solution. Why are we still trying to find a solution. Samsung thinks that the NW could anyway observe that there are UEs transmitting at the edge of the window and then the NW should try to configure a different preamble format. NEC wonders how to do if UL power is the problem.

Proposal 1:
- Nokia thinks that this is dangerous if the current cell is actually congested. DT thinks that the NW needs to be able to de-configure this so that UEs don't move to the second best cell when the best cell gets congested. Nokia thinks that during congestion the Chiba UEs would no longer work. DT thinks the UEs that entered the second best cell would not reselect back even if the best cell would change the broadcast indication.

=> Can discuss further offline.
=> Should consider more detailed analysis of the problem and existing solutions.

✉ **[Joint/RACH] email discussion [83bis#10] on Chiba issue and aggressive RACH (Sony)**
-more detailed analysis of the problem (Chiba: Latency vs. UL power; Aggressive RACH: ???) and existing solutions

R2-133316 Random Access Issues; Nokia Corporation, NSN; Disc; REL-11; TEI11;
[Moved from 4 to 5.3]
R2-133405 RACH transmission failure issue; NTT DOCOMO, INC.; Disc; REL-12; TEI12;
R2-133422 Consideration on Chiba issue; NEC; Disc; REL-12; TEI12;
R2-133374 Aggressive RACH issue; Huawei, HiSilicon; Disc; REL-12; TEI12, LTE-L23;
[Moved from 7.10.1 to 5.3]
All 4 Tdocs not treated

CRs:
R2-133160 Correction to PRACH transmission failure handling; Sony; CR; 36.331; F; REL-11; TEI11;
[Moved from 4 to 5.3]
R2-133161 Correction to PRACH transmission failure handling; Sony; CR; 36.321; F; REL-11; TEI11;
[Moved from 4 to 5.3]
R2-133162 Correction to PRACH transmission failure handling; Sony; CR; 36.304; F; REL-11; TEI11;
[Moved from 4 to 5.3]
R2-133164 Correction to PRACH transmission failure handling; Sony; CR; 25.331; F; REL-11; TEI11;
[Moved from 4 to 5.3]
R2-133165 Correction to PRACH transmission failure handling; Sony; CR; 25.304; F; REL-11; TEI11;
[Moved from 4 to 5.3]
All 5 CRs not treated

6 LTE: Rel-11 and earlier releases

6.1 LTE Rel-10 and earlier release WIs

Changes to functionality introduced in Rel-8, 9 and 10 even if change is proposed only for Rel-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)

6.1.1 Control Plane

Positioning

R2-133136 Capability indication for inter-frequency RSTD measurement support for OTDOA; Qualcomm Incorporated; Disc; REL-10; TEI10, LCS_LTE;

- LG supports proposal 1 and 2. BlackBerry as well. Intel as well however Intel wonders what we do for Rel-9. Intel thinks that there was different understanding for Rel-9. Some companies thought that the NW may configure inter-frequency RSTD on best effort basis. QC agrees that a Rel-9 would need to use the Rel-10 capabilities. Otherwise we could include the capabilities in Rel-9. QC is not sure whether we want to do a late change for Rel-9.
- QC clarifies that a NW could provide all assistance information to a Rel-9 UE and hope that the UE makes use of it.
- Sequans supports proposal 1.
- Sequans wonders whether for the second proposal the eNB does not know whether the UE has to do positioning. Somehow the positioning server should indicate that to the eNB. QC thinks that the eNB would know that the UE has an emergency call. Sequans thinks that we should support this also for other use cases. QC considers the emergency cases as most critical.
- Huawei thinks that the new capability is not needed. The NW should ensure that all emergency calls happen on the carrier where OTDOA is supported and that the UE is not handed over to another carrier during the ongoing call. QC thinks that it should be possible to execute the emergency call on any frequency if the UE supports inter-frequency RSTD. That could avoid possible issues with a failed inter-frequency handover at the beginning of the emergency call.
- Huawei would be fine with proposal 1.
- CATT thinks that this is not essential for Rel-10. The NW could use other mechanisms instead. QC considers it essential for these use cases and other positioning mechanisms might not be available or sufficient.
- Chairman wonders whether the UE should indicate in RRC for which band it supports OTDOA rather than just one bit. QC agrees that this could be good. QC thinks it is not required to have a matrix though. NSN wonders whether it is likely that the UE supports it on one band but not in another. QC does not know.
- ALU supports proposal 2 as otherwise the only other option is to handover the UE always for emergency calls which is not good either. Samsung agrees with Huawei that the Proposal 2 is not needed. Verizon thinks the handover is not a good option since in the future most UEs will support inter-frequency RSTD and then there is no need for the NW to handover all the emergency calls.

Agreements

1 Add an inter-frequency RSTD measurement support indicator to the Rel-10 LPP OTDOA ProvideCapabilities message [TS 36.355].

2 Add an inter-frequency RSTD measurement support indicator to the Rel-10 RRC UE-EUTRA-Capability IE [TS 36.331].

R2-133137 Correction to missing capability indication for inter-frequency RSTD measurements; Qualcomm Incorporated; CR; 36.355; F; cat.A CR?; REL-10; TEI10, LCS_LTE;

- Sequans wonders how this relates to CA. A carrier might be considered as inter-frequency RSTD if a carrier is not configured but considered as intra-frequency once it is configured as intra-frequency. QC thinks that could be discussed. Sequans thinks that the LPP capabilities would need to be updated whenever a carrier is configured or de-configured for the UE. NSN thinks that the serving cell is always the primary serving cell. The positioning server needs to know the primary frequency and whether it should provide

information for other carriers as well. QC thinks the UE will provide its capabilities based on the current radio configuration when the session starts.
=> Can discuss field description of supportedBandList (what it really indicates).
=> Update cover page
=> CB: An updated CR can be provided in R2-133630 (QC)

R2-133630 Correction to missing capability indication for inter-frequency RSTD measurements; Qualcomm Incorporated; CR; 36.355; F; cat.A CR?; REL-10; TEI10, LCS_LTE;
=> CR is in principle agreed

R2-133139 Addition of inter-frequency RSTD measurement capability indicator for OTDOA; Qualcomm Incorporated; CR; 36.331; F; cat.A CR?; REL-10; TEI10, LCS_LTE;
- Huawei wonders why there is no IE in the common capabilities. QC wonders whether this is needed and would create overhead. Huawei thinks that a single mode UE would only provide the common capabilities.
=> Add the IE also to the common capabilities.
- Huawei and Ericsson think that "otdoa-UE-assisted-v10b0 ENUMERATED {supported}," can be removed.
=> Remove "otdoa-UE-assisted-v10b0 ENUMERATED {supported},"
- NSN wonders whether we need to distinguish the case where a UE supports OTDOA or not.
=> Can discuss offline.
=> CB: An updated CR can be provided in R2-133631 (QC)

R2-133631 Addition of inter-frequency RSTD measurement capability indicator for OTDOA; Qualcomm Incorporated; CR; 36.331; F; cat.A CR?; REL-10; TEI10, LCS_LTE;
- NSN and Huawei wonder why the UE would not be able to support OTDOA on all bands.
- Huawei thinks that the positioning server needs to know which bands the UE supports at all. QC thinks that in the last meeting we agreed that the UE could indicate those bands in LPP in which it supports OTDOA. Verizon thinks that it might not always be possible to test OTDOA for all bands. Huawei thinks that we have other features where we do not distinguish per-band capabilities either. NSN thinks that this is not a fix but enhanced functionality. Ericsson thinks that without the band list we should clarify that a UE supports OTDOA in and across all bands it supports. That would be OK for Ericsson but might be more difficult for the UE to ensure. QC thinks that this cannot be guaranteed and it is not realistic to assume that the UE will support RSTD measurements on all bands. Verizon would also be fine to indicate that a UE is expected to support RSTD on all its bands. NSN would be OK with that as well. SEQUANS would also support that.
- Huawei and NSN think that this does not need to be tested per band.
- NSN indicates that they do not co-sign this version of the CR
=> CB: Can come back to inter-frequency RSTD (QC)
=> revised in R2-133651

R2-133651 Addition of inter-frequency RSTD measurement capability indicator for OTDOA; Qualcomm Incorporated; CR; 36.331; F; cat.A CR?; REL-10; TEI10, LCS_LTE;
=> Change "OTDOA-PositioningCapabilities-v10b0" to "OTDOA-PositioningCapabilities-r10"
=> With this change the CR is in principle agreed in R2-133730

R2-133471 Clarifications to OTDOA assistance data delivery; Intel Corporation; Disc; REL-9; LCS_LTE;
- NSN thinks that it was discussed extensively when LPP was introduced that the reference cell does not need to be the UE's serving cell.
- NSN thinks that the performance requirements apply primarily for synchronous deployments. Intel think they apply to both and thinks they cannot be fulfilled in an asynchronous deployment if the reference cell is not the serving cell.
- QC thinks that the current specifications are correct. QC thinks that the "clarification" would actually imply that inter-frequency OTDOA can be configured where the serving cell does not have any OTDOA support. In such a case the UEs serving cell would not at all be included in the assistance information. QC agrees that it is difficult to obtain the SFN of the cell but we need to find a solution for it.
- Huawei agrees with NSN that the reference cell does not need to be the serving cell. QC also agrees.
- Ericsson wonders whether it is a correction or an enhancement. Intel thinks we need to make sure that the requirements can be fulfilled.
- QC thinks that the UE might have to obtain the SFN from the reference cell.
=> Can discuss further offline

=> Noted

R2-133472 Clarifications to OTDOA assistance data delivery; Intel Corporation; CR; 36.355; F; cat.A CRs?; REL-9; LCS_LTE;
=> Postponed

Carrier Aggregation

R2-133188 Clarification on supportedBand; NSN, Nokia Corporation, Qualcomm Incorporated; CR; 36.331; F; cat.A CR?; REL-10; LTE_CA-Core;
=> Change "BandCombinationParameters-r10" to "supportedBandCombination"
=> With this change the CR is in principle agreed in R2-133632

R2-133577 Clarification on Scell incusion in neighbour cell measurements; LG Electronics Inc.; Disc; REL-10; LTE_CA-Core;
- ALU thinks that a neighbour cell would be reported by the A4 event while the cell is not configured for carrier aggregation. But once it is configured as SCell, the cell will no longer be reported and then the network is not able to update it measurement lists. Also the UE would need to update the "cell triggered" list and the "applicable cell" list. ALU wonders whether the UE would remove the cell from the "cell triggered" list once it is added as SCell.
- MediaTek agrees with ALU that these restrictions make UE implementation a bit more complicated. However, MediaTek would be OK to stick to the previously agreed UE behaviour.

=> CB: Can discuss further "Clarification on Scell incusion in neighbour cell measurements" offline and come back later. (LG)

- LG reports that companies agree that the results are only included in the neighbour cell list for A3 and A5. However, it should be investigated how the cellsTriggeredList should be handled upon SCell addition for A3, 4 and 5. Nokia wonders whether it really matters how the UE behaves with respect to the cellsTriggeredList. LG thinks that this might be the case.

Agreements
RAN2 confirms that…
1 Currently UE shall include SCell in measResultNeighCells only for event A3 and A5 where SCell is considered to be neighbouring cell by the exception rule.
1a An SCell measurement may then occur twice in the measurement report (once as neighbour and once as serving cell)

Other

R2-133189 Default configuration during handover and reestablishment; NSN, Nokia Corporation; Disc; REL-10; TEI10;
- NEC supports the observation.
- ALU and Samsung think that section "5.3.1.1" describes the general principle and that does not need to be changed. But it could be OK to remove the "only possible". ALU thinks that the text added in the earlier CR meant that the NW can only use full configuration. But the UE may in addition use specified behaviour to revert back.

=> RAN2 confirms that the current wording can be misunderstood. Can discuss offline how to clarify.

R2-133166 ASN.1: UE actions on absence in "conditional presence" statements; Samsung; Disc; REL-10 LTE-L23, TEI10
- CATT agrees to the described behaviour. CATT would like to rather clarify the UE behaviour. Samsung suggests to agree to the proposal and to work on the details in the email discussion.
- NSN is fine if the intention that the NW removes a hanging configuration. But the current text does not clearly state what the UE shall do and in which case. Therefore, it is difficult for the NW to behave "correctly".

Agreements
1: When the network in delta signalling omits a field with need code "ON", the UE takes no action related to the configuration indicated by this field or any of its sub fields.
2: When the network does not act in accordance with the guidance from a conditional

presence statement, the UE behaviour is undefined.

✉ **[LTE/RRC] email discussion [83bis#11] Conditional presence statements (Samsung) -To Discuss a draft CR until next meeting**

R2-133347 Clarification on Minimum Transport Block Size of Msg3; CATT; CR; 36.300; F; REL-10; TEI10;
- Ericsson thinks that it is not necessary to capture these details in Stage-2. It could rather be removed completely from stage-2. CATT would be fine with that as well.
- CATT understands that the difference is due to the 24 bit CRC.
- Intel thinks we can do it from Rel-11

=> Not agreed.

R2-133349 Clarification on Minimum Transport Block Size of Msg3; CATT; CR; 36.300; A; REL-11; TEI10;
=> Remove "and is at least 80 bits"
=> Update cover page
=> CB: An updated CR can be provided in R2-133633 (Cat F, TEI11) (CATT)

R2-133633 Clarification on Minimum Transport Block Size of Msg3; CATT; CR; 36.300; F; REL-11; TEI11;
=> CR is in principle agreed

R2-133183 Clarification regarding UE release of blacklisted cells in case of overlapping PCI ranges; Samsung; CR; 36.331; F; REL-11; LTE-L23, TEI11;
- NSN and Intel think that the proposed CR is less clear than the current text. Ericsson agrees.
- Intel thinks the CR would change the behaviour of the UE. ALU agrees. Samsung did not intend to change the behaviour.
- Ericsson thinks that this is an informative note that can anyway not change the normative UE behaviour.

=> Not agreed.
=> Should discuss offline so that everyone has the same understanding of what is currently in the specification

R2-133263 Clarifications on Measurement; Huawei, HiSilicon; Disc; REL-10; TEI10, LTE-L23;
Proposal 1:
- Nokia thinks that 11.1 already clarifies that the limit is 32 (UE capability related constraints). Huawei thinks that this causes actually confusion whether the limit in 11.1 or in 36.133 applies. Nokia thinks that 11.1 specifies what the NW is allowed to configure whereas 36.133 specifies on how many the UE has to measure. Nokia agrees that the NW may configure more than what 36.133 requires it to measure on. Nokia agrees with the proposal.

Proposal 2:
- BlackBerry thinks that we captured earlier that if the NW configures more frequencies, the UE behaviour is unspecified. Samsung and Nokia agree that the NW cannot predict on which of the configured frequencies the UE would actually measure. QC agrees and wonders whether it is really wise if the NW configures more than what the measurement capabilities require.

- DT thinks that proposals 1, 2 and 3 are obvious from the specifications. Huawei has observed IOT issues.

Agreements (Confirmation or earlier agreements)
1 RAN2 confirms that the eNB can configure more cells (according to 36.331, section 11.1) for a frequency than the minimum measurement requirements in TS 36.133.
2 RAN2 confirms that the eNB may configure more frequencies (according to 36.331, section 11.1) than the minimum monitoring requirements in TS 36.133. However, the NW does not know on which of the configured frequencies the UE will measure.
3 RAN2 confirms that cell storage requirement is specified in TS 36.331.
4 RAN2 confirms that the cell indicated by the "cellForWhichToReportCGI" is counted in the "minCellperMeasObjectxxx".

- Nokia thinks that Proposal 4 and 5 could require a clarification in the specifications.

- QC wonders whether we can really change Rel-10 if there seem to be legacy issues in the field. Huawei points out that they observed that the UE reports no CGI if the NW configured already 32 cells but it does report CGI if the NW configures only 31. Ericsson wonders whether the physical cell identity for which the UE was requested to report CGI already was included in the 32. Huawei confirms.

=> Should discuss whether 4 and 5 above can be agreed or whether the network should count the report CGI cell as one of the 32.

R2-133266 Clarifications on Measurement; Huawei, HiSilicon; CR; 36.331; F; cat.A CR?; REL-10; TEI10, LTE-L23;
=> revised in R2-133646

R2-133646 Clarifications on Measurement; Huawei, HiSilicon; CR; 36.331; F; cat.A CR?; REL-10; TEI10, LTE-L23;

- BlackBerry thinks that since there is no limit in number of cells for UMTS cell identifications in 36.133, what makes the limitation for this specific case is subclause 11.1 in 36.331. Therefore generally both 36.133 and 11.1 apply for measurement limitations (whichever is the lowest). The first note should be updated to reflect this (for example by adding “those or”).

=> Move “Note 1” into the table to make it normative and call it “NOTE”.
=> Consider improving the text of the Note in the table.
=> Update Inter-operability to and consequences if not approved
=> Can come back in the next meeting.
=> Postponed

6.1.2 User Plane

The documents in this AI will be treated in the UP session. See Annex G.

R2-133226 Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE; CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE; CR; 36.321; F; REL-10; LTE_CA-Core;
R2-133227 Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE; CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE; CR; 36.321; A; REL-11; LTE_CA-Core;
R2-133249 Discussion on the collision between TTI bundle and Msg 3; Samsung; Disc; REL-11; TEI11, LTE-L23;
R2-133427 Collision of TTI bundle and Msg3; Ericsson; Disc; REL-10; TEI10, LTE-L23;
R2-133152 Discussion on priority between msg3 and other UL grant; ZTE; Disc; REL-10; LTE-L23,TEI10;
R2-133153 Priority between msg3 and other UL grant; ZTE; CR; 36.321; F; REL-10; LTE-L23,TEI10;
R2-133154 Priority between msg3 and other UL grant; ZTE; CR; 36.321; A; REL-11; LTE-L23,TEI10;
R2-133355 TTI Bundling and Msg3; LG Electronics Inc.; Disc; REL-11; TEI11, LTE-L23;
R2-133377 Discussion on collision between TTI bundling and Msg3 transmission; Huawei, HiSilicon; Disc; REL-10; TEI10;
R2-133487 Discussion on TTI bundling and Msg3 transmission; Intel Corporation; Disc; REL-10; TEI10;
R2-133230 Collision between Msg3 and TTI bundling; CATT; Disc; REL-10; TEI10, LTE-L23;
R2-133231 Modification on the collision of Msg3 and TTI bundling; CATT; CR; 36.321; F; REL-10; TEI10, LTE-L23;
R2-133232 Modification on the collision of Msg3 and TTI bundling; CATT; CR; 36.321; A; REL-11; TEI10, LTE-L23;
R2-133277 The HARQ operation for TTI bundling and Random Access procedure; ASUSTeK; Disc; REL-10; TEI10, LTE-L23;

6.2 LTE Rel-11 WIs

Changes to functionality introduced in Rel-11.
(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, target: June. 13, WID: RP-120859)
(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)

6.2.1 Control Plane

CoMP

R2-133302 Capability signalling for CSI processes; Ericsson; CR; 36.331; F; REL-11; COMP_LTE_DL-Core;
- Nokia thinks this still needs to be discussed in RAN plenary. Ericsson thinks it was settled in the previous meeting. QC accepts the Ericsson proposal. Nokia thinks it is also related for IOT availability.
- Nokia is not willing to take the decision in RAN2 since it is not clear whether the UE can set the bit in all band combinations if it passed IOT for some band combinations only (since no IOT was available for the others). Nokia thinks that we could send an LS to RAN1

=> Can discuss offline whether to send an LS to RAN1 and/or RAN.
- Ericsson proposes to discuss it further at the next meeting.

=> CR is postponed

Rel-11 Capabilities

R2-133182 Capturing mandatory/optional agreements on Rel-11 UE features; NTT DOCOMO, INC.; CR; 36.331; F; REL-11; eICIC_enh_LTE-Core, TEI11, LTE-L23;
=> Revised in R2-133703

R2-133703 Capturing mandatory/optional agreements on Rel-11 UE features; NTT DOCOMO, INC.; CR; 36.331; F; REL-11; eICIC_enh_LTE-Core, TEI11, LTE-L23;
- SEQUANS wonders why the split is needed. DCM explains that it is already possible in signalling anyway.
- Ericsson thinks that the 36.306 CR should reflect this more clearly.

=> CR is in principle agreed

R2-133181 Capturing mandatory/optional agreements on Rel-11 UE features; NTT DOCOMO, INC.; CR; 36.306; F; REL-11; LTE_CA_enh-Core, COMP_LTE_DL-Core, eICIC_enh_LTE-Core, LTE_enh_dl_ctrl-Core, TEI11, LTE-L23;
- Nokia wonders whether the intention is that RAN4 specifies in 36.133 for which band combinations it is mandatory. DCM thinks that the RAN4 specifications do not say what is mandatory or not.

=> Clarify that this applies to carrier aggregation band combinations with UL serving cells in different bands.
- Samsung wonders whether for the case of redirection the NW would need to know the support in IDLE mode. QC agrees with Samsung that whether or not the NW tries to redirect the UE might depend on the support in IDLE mode. It may also prioritize different frequencies for cell reselection depending on whether or not the UE supports the feature in IDLE. DCM agrees with that. NSN wonders what was agreed in RAN plenary. NSN also wonders whether it is really important for the NW to know.

=> Can discuss whether “rsrqMeasWideband” should only apply to CONNECTED or also to IDLE and in particular whether the NW needs to know whether the UE supports it while in IDLE.

=> In section 4.3.5.3 move the added text behind the first sentence.

=> CB: An updated 36.306 CR on “Capturing mandatory/optional agreements on Rel-11 UE features” can be provided in R2-133635 (DCM)

R2-133635 Capturing mandatory/optional agreements on Rel-11 UE features; NTT DOCOMO, INC.; CR; 36.306; F; REL-11; LTE_CA_enh-Core, COMP_LTE_DL-Core, eICIC_enh_LTE-Core, LTE_enh_dl_ctrl-Core, TEI11, LTE-L23;
- Change “This field defines whether the UE can perform RSRQ measurements with wider bandwidth as specified in [16].” To “This field defines whether the UE can perform RSRQ measurements in IDLE and RRC_CONNECTED with wider bandwidth as specified in [16].”

=> With this change the CR is in principle agreed in R2-133727

- Nokia thinks we should inform RAN plenary that we agreed that Wideband RSRQ measurements capability bit applies also for IDLE mode and that it can indicate split TDD/FDD capabilities.

=> A draft LS on Wideband RSRQ measurement capability can be sent from the next RAN2 meeting.

Other

R2-133071 Measurement result reporting in case of CGI reporting; Qualcomm Incorporated; CR; 36.331; F; REL-11; TEI11;

- Samsung wonders what the general understanding is. Is the UE not allowed to include optional information unless there is such a note. QC did not do a general check. QC observed that RAN5 specifications do not allow including these fields. Based on the procedural text, NSN thinks that the UE shall not include them. But NSN also thinks that one could interpret this that the UE is allowed to include it. Therefore NSN agrees with Samsung that we should agree a general principle. Huawei observed that some UEs observe measurement results with CGI reporting but the measurements happen to be not accurate. Samsung thinks we should not introduce a note for every case where RAN5 test cases have a problems.

=> Not agreed

=> The UE is allowed but not required to include the optional fields. If the UE includes measurements, they shall fulfil the measurement requirements.

=> A draft LS to RAN5 on “Measurement result reporting” indicating that the UE is allowed but not required to include the optional fields can be provided in R2-133636 (QC)

R2-133636 Draft LS on “Measurement result reporting” to RAN5; QC

=> Change to “RAN2 asks RAN5 to modify their test specifications to allow the UE behaviour described in this LS if required”

✓ => With this change the LS on “Measurement result reporting” to RAN5 is agreed in R2-133647

R2-133072 measResultLastServCell for SON-HOF report; Qualcomm Incorporated; CR; 36.331; F; REL-11; TEI11;

- Samsung thinks that before the timer expires the UE received the measurement configuration and performed the swapping operation. Samsung wonders whether the UE has to continue measuring on the source PCell even if that was on a different carrier. MediaTek thinks that the UE should only include what it has available. Chairman wonders how old the included measurement is allowed to be. MediaTek think we agree earlier to leave this to UE implementation.

=> Change to “source PCell” instead of the proposed sentence.

=> With this change the CR is in principle agreed in R2-133637

=> We will also see a Rel-10 CR in the next meeting

R2-133190 'UE should' vs 'UE shall'; NSN. Nokia Corporation; Disc; REL-11; TEI11;

- CATT sees no difference from a NW behaviour point of view. NSN thinks that we could either say nothing or have “shall” instead. There is no point to say “should” as the NW does not know that the UE does.
- BlackBerry would be fine with the proposal. Ericsson agrees as well. Huawei agrees as well.
- QC wonders whether it really matters whether or not the UE releases it. The next time the NW wants to use e.g. the ACK/NACK format, it has to configure it again anyway. If the UE kept the old IE it will be overridden.

=> RAN2 agrees to the proposal.

R2-133191 Clarification on otherwise behaviour; NSN, Nokia Corporation; CR; 36.331; F; REL-11; TEI11;

=> Update cover page to avoid the impression that we adjust specifications to implementations.

=> CB: An updated CR can be provided in R2-133638 (NSN)

R2-133638 Clarification on otherwise behaviour; NSN, Nokia Corporation; CR; 36.331; F; REL-11; TEI11;

=> revised in R2-133708

R2-133708 Clarification on otherwise behaviour; NSN, Nokia Corporation; CR; 36.331; F; REL-11; TEI11;

=> CR is in principle agreed

R2-133103 Corrections of the 3GPP2 references in TS 36.331; Huawei, HiSilicon; CR; 36.331; F; REL-11; TEI11;
- NSN thinks that the version number if sufficient to have in the reference table. NSN sees no need to include it everywhere where the reference is used. Ericsson points out that they followed the MCC recommendation to specify it also in all IEs. But Ericsson would also be open to simplifications. QC would support the NSN proposal.

=> CB: An updated CR on “Corrections of the 3GPP2 references” can be provided in R2-133639 where the version of the 3GPP2 specification is only shown in the reference section. The version number should be removed from all occurrences in the remaining document. (Huawei)

R2-133639 Corrections of the 3GPP2 references in TS 36.331; Huawei, HiSilicon; CR; 36.331; F; REL-11; TEI11;
=> CR is in principle agreed

R2-133475 Corrections to 3GPP2 specification references; Ericsson; CR; 36.331; F; REL-12; TEI12, LTE-L23;
[Moved from 7.10.1 to 6.2.1]
not treated

6.2.2 User Plane

The documents in this AI will be treated in the UP session. See Annex G.

R2-133530 Dynamic scheduling of TTI bundles; Ericsson; Disc; REL-11; TEI11, LTE-L23;
R2-133247 Discussion on PHICH missing due to glitch; Samsung; Disc; REL-11; TEI11, LTE-L23;
R2-133250 Discussion on TTI bundling; Samsung; Disc; REL-11; TEI11, LTE-L23;
R2-133252 UL grant patterns for TTI bundling; Samsung; CR; 36.321; F; REL-11; TEI11, LTE-L23;
R2-133255 On the behavior of TTI bundling; MediaTek Inc.; Disc; REL-10; TEI10, LTE-L23;
R2-133312 Support of dynamic scheduling of TTI bundle transmissions; Panasonic; Disc; REL-11; TEI11, LTE-L23;
R2-133228 Dynamic scheduling of TTI bundling; CATT; Disc; REL-11; TEI11, LTE-L23;
R2-133229 Clarification on dynamic scheduling of TTI bundling; CATT; CR; 36.321; F; REL-11; TEI11, LTE-L23;
R2-133351 TTI Bundle Shifting; LG Electronics Inc.; Disc; REL-11; TEI11, LTE-L23;
R2-133352 Clarification on TTI Bundle Shifting; LG Electronics Inc.; CR; 36.321; F; REL-11; TEI11, LTE-L23;
R2-133429 Clarification on SPS implicit release; Ericsson, Qualcomm Incorporated; Disc; REL-11; TEI11, LTE-L23;

7 LTE: Rel-12

7.1 WI: HetNet mobility enhancements for LTE

(HetNet_eMOB_LTE-Core, leading WG: RAN2, REL-12, started: Dec.12, target: March14, WID: RP-122007)
Since the time budget is limited to about one slot (~2 hours) per meeting, it is suggested to discuss sub-feature sequentially. As agreed during RAN2-83, we will focus on "Improved recovery from RLF" since that got little attention in the previous meetings. Secondly, we will aim to progress on "Improve overall HO performance with regard to HO failure rate and Ping-pong".

7.1.1 Improve overall HO performance with regard to HO failure rate and Ping-pong

7.1.1.1 Mobility information upon IDLE->CONNECTED

How accurate information is required for which use case? How can the information be transferred (e.g. will the eNB get a complete history before the RRCConnectionReconfiguration used to setup the DRBs? Is it possible to re-use existing functionality such as e.g. MDT/RLF reporting?

R2-133296 Investigation of mobility information; Ericsson; Disc;
- MediaTek wonders whether the UE should include inter-RAT cells. Ericsson does not have a strong view.
- NSN would like to understand the use cases first. MediaTek think there could be several use cases. One use case is to prevent fast moving UEs from entering small cells. But it could also be used in the context of EDDA, i.e., how quickly to release RRC Contexts. NSN thinks we should re-discuss this together with the UE based solutions. Intel agrees. Nokia thinks we already agreed to have the information. Now we can discuss what information that is before going to the next topic. MediaTek agrees with Nokia.
- Ericsson clarifies that a very simplistic algorithm was used and even with that it was possible to estimate correctly in more than 80% of the cases if 8 cells were reported. Intel would like to see an analysis with a better estimation and a more realistic deployment model. MediaTek thinks that even if expect a bit less accuracy in a realistic deployment this seems to be still quite good.
- Panasonic supports this proposal. LG would also support this approach.

=> Noted

R2-133113 Mobility information reporting when entering connected state; CATT; Disc;
- Huawei thinks that the Rel-8 MSE is not very accurate and we should better rely on the NW estimate only.
- ALU thinks that the benefit of providing the MSE could be that it is provided early in particular if the value “low” is reported. An some cases this will be sufficient.
- MediaTek thinks that one information would be sufficient and MediaTek thinks that the MSE bit would be sufficient. NSN thinks we could report at least the MSE. We could then report the history if the NW requests it. Ericsson agrees with Huawei that only the history information could be sufficient. Samsung supports the CATT proposal. LG agrees as well and thinks that providing the MSE could always be sufficient in macro networks.
- Nokia wonders whether we need to assume that history information can only be reported after RRCConnectionSetupComplete. ALU explains that RRCConnectionSetupComplete is size critical and should therefore not include a large information.
- ALU thinks that the MSE will be erroneous in a known direction. It will never indicate “slow” if it was actually “fast”. So, if the UE reports “slow” the NW can probably trust that it was slow.
- Nokia wonders whether it is acceptable that the NW needs to configure Rel-8 MSE in SIB in order to get the estimate. Ericsson agrees that this adds additional complexity that would not be needed if the NW is only interested in the history. NSN thinks that in a Het-Net deployment the NW would need to configure an MSE anyway to achieve decent performance.

=> Noted

R2-133384 Granularity of mobility information; Nokia Corporation, NSN; Disc;
not treated

Agreements
1a The UE reports an indicator of availability of visited cell history
1b The UE reports the mobility state estimated by MSE if MSE was configured
2 The network may retrieve the visited cell history upon receiving the indication (1a)
3 The visited cell history comprises cells visited while the UE was IDLE
FFS whether the visited cell history comprises cells visited while the UE was CONNECTED
4 The visited cell history comprises time of stay and physical cell IDs of the visited cells
FFS what the granularity of the time information is
FFS how many cells the history information should cover and whether the NW can request the number it would like to be reported.

R2-133106 Providing Mobility Information Upon IDLE to Connected; ITRI; Disc;
R2-133423 On mobility information during RRC connection setup; Samsung; Disc;
R2-133448 UE mobility information upon Idle to connected transition; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133546 Provisioning of mobility info for connection setup; MediaTek Inc.; Disc; [Late]
R2-133582 How to provide UE mobility information; LG Electronics Inc.; Disc;

All 5 Tdocs not treated

7.1.1.2 UE based solutions for mobility robustness

Including output of [83#12][LTE/Het-Net] Evaluate UE based solutions for mobility robustness (ALU)
The discussion will be based primarily on the outcome of the Email discussion.

R2-133449 Report of email discussion [83#12][LTE/Het-Net] Evaluate UE based solutions for mobility robustness; Alcatel-Lucent (rapporteur); Report; result of email discussion [83#12];

- NSN thinks we should try to take a decision. Ericsson agrees that we should make decisions but wonders whether we should postpone it to offline. NSN thinks that have done enough offline and email discussions.

=> Can discuss offline aiming to narrow down as much as possible.
=> CB: [Het-Net] We will come back later during the week to see whether we can make a decision.

X) Only rely on NW based solutions (no need for any of the below)
A) Decision on solution directions for UE based HO performance improvement:
A.1) HO parameter Scaling based on target cell type
A.2) Solutions based on radio channel conditions
A.3) Early HO command
A.4) MSE based enhancements (based on weighted counting)

Indicative show of hands: Which company supports… (Multiple allowed)
X) 13 companies
A.1) 15 companies
A.2) 5 companies
A.3) 10 companies
A.4) 12 companies

=> We exclude A.2

Indicative show of hands: If we go for a UE based solution, which company supports… (**One vote** allowed)
A.1) 12 companies
A.3) 10 companies
A.4) 8 companies

- Nokia wonders whether TTT scaling in A.1 would really be scaling or jus providing a TTT per target cell like for A3 offset.

R2-133184 Gradient based scaling, further information; Samsung; Disc; 36.331;
[Moved from 7.1.1.1 to 7.1.1.2]
revised in R2-133589

R2-133589 Gradient based scaling, further information; Samsung; Disc; 36.331;
[Moved from 7.1.1.1 to 7.1.1.2]
not treated

R2-133306 Robust mobility in HetNet environment; Nokia Corporation, NSN; Disc;
not treated

R2-133346 Detailed descriptions on Proposal #14 in [83#12]; ETRI; Disc; related to email discussion [83#12];
revised in R2-133605

R2-133605 Detailed descriptions on Proposal #14 in [83#12] ETRI Disc
revised in R2-133701

R2-133701 Detailed descriptions on Proposal #14 in [83#12] ETRI Disc
not treated

R2-133504 Stage 3 signaling for fast handover using RSRP/RSRQ with SToS/Ping-pong avoidance; Intel Corporation; Disc; related to email discussion [83#12];

R2-133505 Stage 3 signaling for mobility state estimation using RSRP; Intel Corporation; Disc; related to email discussion [83#12];
R2-133507 Optimal TTT values to reduce handover failure; Intel Corporation; Disc;
R2-133508 Mobility State Estimation Enhancements using RSRP; Intel Corporation; Disc;
R2-133147 Analysis on Updated Early HO CMD solution; ZTE, Panasonic, ITRI; Disc; related to email discussion [83#12];
R2-133547 Frequently Used Cells; MediaTek Inc.; Disc;
R2-133550 Signalling analysis for Gray-listing - input to email discussion [83#12]; NSN, Nokia Corporation; Disc; related to email discussion [83#12];
R2-133553 Specification impacts for Gray-listing and eMSE - input to email discussion [83#12]; NSN, Nokia Corporation; Disc; related to email discussion [83#12];
R2-133584 Categorization of UE based solutions; LG Electronics Inc.; Disc;
R2-133439 Solution to improve the observability of UE based MSE; Huawei; Disc;
R2-133469 General discussion on HetNet Mobility solutions; NEC; Disc;
All 11 Tdocs above not treated

7.1.2 Improved small cell discovery/identification

As agreed at RAN2-83, RAN2 waits for further input from RAN4 about relaxed measurement requirements before deciding how to progress with the remaining solution proposals.

R2-133242 The assistance information for small cell discovery; Potevio; Disc;
R2-133376 MSE Based Inter-frequency Measurements; Nokia Corporation, NSN; Disc;
Both not treated

7.1.3 Improved recovery from RLF

7.1.3.1 Early T310 Termination

Should understand how much more reestablishments (towards unprepared cells) would happen if pico cells would always configure a shorter T310. Investigate whether a short T310 should be applied rather than triggering reestablishment immediately when Qout is met. Also investigate whether Oout is usually triggered before or after A3/TTT. What are the actual outage times (in s) per HOF with and without this enhancement?
Including output of [83#13][LTE/Het-Net] Early T310 termination (QC)
The discussion will be based primarily on the outcome of the Email discussion.

R2-133073 Email discussion summary: [83#13][LTE/Het-Net] Early T310 termination; Qualcomm Incorporated; Report; result of email discussion [83#13];
=> Noted

R2-133075 Risk of short T310; Qualcomm Incorporated; Disc;
- Samsung and Intel think that the significant increase of RLFs occurring with the early T310 termination indicate that there are many false alarms. Intel thinks that fast moving UEs should not apply early termination as there would be a chance that the UE finds the macro cell again before declaring the normal T310.
- ALU thinks that different simulations have used different trigger criteria which makes the results difficult to compare.
- Chairman wonders which cells should really configure a short T310 or an early termination. We saw HOF issues only for small cells under the coverage of a macro cell (P2M handovers). So, only pico cells under coverage of a macro cell should use this. Then there is also no problem with coverage holes. And it can also be used for all UEs that are connected to this small cell… no matter which speed. Maybe in those cells it is sufficient to configure a shorter T310 value and it might not cause false alarms. ALU thinks that also M2P have increased HOF rates.
- Ericsson agrees with Samsung that the model used in these simulations is quite pessimistic and that it is in fact possible to transmit PDCCH and receive measurement reports from the UE even while T310 is running.
- ITRI wonders whether it is likely that the UE does not find a neighbour (macro) fulfilling an A3 while moving out of a pico cell.
- Ericsson thinks that just shortening the T310 does not seem like a very promising in all case.

- ALU thinks one should terminate the earliest after TTT expiry and after a chance to send the measurement report.
- MediaTek thinks that early T310 termination could actually be useful.
- QC thinks that other companies' results show that early termination results in large interruption time since the target is not prepared. But if the target cell would fetch the context it can be ensured that it is prepared. But since early termination has a gain in outage time this should result in an overall gain of interruption time. Samsung has not observed any such technology potential.
- Intel thinks that early termination could be promising for slow moving UEs.
- Samsung thinks that we should not make conclusions based on the pessimistic models.

=> A too short T310 value seems to increase the false alarm rate
=> A too long T310 value may increase the outage time

- Chairman thinks that the feature is not very complicated. So, maybe the bar for introducing it is not too high.
- QC thinks we could consider that the target cell is always prepared or can prepare itself by context fetch.

=> Can be discussed further based on the observations and discussions
=> Should consider how many changes would be required in implementations (and specifications)

R2-133570 Limitation of Evaluation Methodologies in TR36.839; Samsung; Disc; related to email discussion [83#13];
not treated

R2-133509 Performance study of the benefit of early T310 termination; Intel Corporation; Disc;
=> revised in R2-133599
R2-133599 Performance study of the benefit of early T310 termination; Intel Corporation; Disc
not treated

R2-133571 Analysis of T310 Management Schemes; Samsung; Disc;
revised in R2-133596
R2-133596 Analysis of T310 Management Schemes; Samsung; Disc;
not treated

R2-133115 Performance evaluation of T310 early termination methods; CATT; Disc;
R2-133548 Fast Reestablishment; MediaTek Inc.; Disc;
R2-133435 Solutions to improve RLF recovery in HetNet deployment; Huawei; Disc;
All 3 Tdocs not treated

Late or withdrawn

R2-133074 Further simulation results for T310 early termination; Qualcomm Incorporated; Disc;
[Late]
not treated

7.1.3.2 Network Assisted Re-establishment

Discuss mechanisms to recover quickly from RLF/HOF and to minimize impact on application layer. Should quantify improvement over existing baseline and other mechanisms. What contributes most to the re-establishment delay? How can interruption due to re-establishment be reduced? Need for new mechanisms?

R2-133299 Cell selection at re-establishment; Ericsson; Disc;

- LG thinks the signalling overhead of such an approach would be significant. Ericsson acknowledges this and thinks that this may be more important in some cells in others.
- Nokia wonders whether the intention is to have priorities for cell selection. Nokia thinks that so far there are not requirements for that. Ericsson explains that the intention is rather to assist the UE in finding a cell quickly.
- QC thinks that if the intention is just to indicate e.g. in a measurement object that this is a coverage layer, they could support the proposal. Samsung thinks that there would be limited gain for intra-frequency cell selection. But for inter-frequency deployments it could be helpful. Ericsson agrees to that.
- ALU thinks that in Rel-8 discussions it was assumed that the UE knows best and finds the cell with the shortest delay by itself. ALU thinks that if the UE has not yet found an intra-

frequency neighbour it would start searching on inter-frequency neighbours and it would probably start with those for which measurement objects have been configured.
- ALU wonders whether load balancing is Ericsson's main goal or reduced outage time. Ericsson targets outage time.
- MediaTek tends to agree with QC that it could be good for the UE to know which layer is the coverage layer. Nokia thinks that we would need to clarify what the indication in the measurement object actually means for UE.

=> There is no need for the intra-frequency case since the UE will have found a candidate target cell anyway if there is any.

- Intel thinks that for inter-frequency handover, if the NW has configured an inter-frequency measurement and the UE has already performed inter-frequency measurements, the UE will know that cell and select it quickly if a RLF happens. QC agrees.
- NSN would like to see simulations and signalling overhead costs.

R2-133555 Re-establishment Enhancements for HetNet; NSN, Nokia Corporation; Disc;

Proposal 1:
- MediaTek thinks that we earlier assumed that the UE may assume that the NW prepares the first cell in the measurement report list and it might also prepare further cells.
- Panasonic wonders when this list would be sent. NSN thinks it could be sent at any time e.g. based on deployment knowledge or based on received measurement reports.
- Ericsson and Panasonic think that this is similar to what we discussed on the Ericsson paper and it was considered to be not useful. NSN thinks it is similar but not exactly the same.
- QC wonders whether the UE would not perform the normal cell selection, ignore the cells that it might select otherwise. It may result in selecting a non-optimal cell.
- Intel thinks that if the NW knows anyway from the measurement which cells the UE sees, it could just prepare those.
- MediaTek thinks we should rather consider how to ensure that the UE reports multiple candidate cells in the measurement report even if they did not yet fulfil the trigger criteria.

Proposal 2:
- CATT thinks it is difficult for the L2 to judge whether the application requires maintaining a connection. Ericsson agrees and thinks that will be difficult to get to work in a stable way.
- MediaTek thinks that if the UE goes to IDLE, the NAS layer will trigger establishment of a new connection. If not, the UE cannot be paged. QC agrees with MediaTek. QC wonders how long it will take for the eNB to detect that the UE has gone. NSN does not know.
- Panasonic thinks that this is not really an enhancement since that RLF would not matter either.

Proposal 3:
- Ericsson thinks that so far we don't have events where a measurement is compared against a previous measurement. But Ericsson anyway finds the proposal interesting.

- QC thinks that if we want to enhance the reestablishment performance we should just introduce context fetch since it can be done on the NW side without requiring changes to the UE. ALU agrees that context fetch would be easier than preparing multiple cells. Panasonic wonders how that would be different from forward handover discussed earlier. IDT thinks that then the UE could take over the decision on whether or not to handover. QC thinks that here we are discussing RRC Connection Re-establishment. QC thinks that in Het-Net deployments we have new issues to address. Ericsson thinks it has been discussed in RAN3 in the same context but was ruled out. MediaTek thinks that this Het-Net context is different and quite elegant. MediaTek thinks that we have test cases and could verify that UEs only apply it in case of RLF and otherwise follow the NW controlled HO. ALU agrees with MediaTek and thinks that a UE would usually get better performance if the normal HO succeeds. ALU also thinks the NW could reject the request if UEs abuse it. Ericsson thinks we would not specify it if the purpose is only to use it in specific error cases.

R2-133574 Improved RRC Connection Re-Establishment; Samsung; Disc;
revised in R2-133597

R2-133597 Improved RRC Connection Re-Establishment; Samsung; Disc;
not treated

R2-133108 Discussion on Recovery from Radio Link Failure in HetNet Deployments; ITRI; Disc;

R2-133114 RLF recovery enhancements on UE context preparation; CATT; Disc;
R2-133338 Network assisted fast re-establishment; Samsung; Disc;
All 3 Tdocs not treated

R2-133348 Improved recovery from RLF with Proposal #14 in [83#12]; ETRI; Disc; related to email discussion [83#12];
=> revised in R2-133606
R2-133606 Improved recovery from RLF with Proposal #14 in [83#12] ETRI Disc
withdrawn

7.1.3.3 Other

No contributions.

7.2 SI: Small Cell Enhancements - Higher Layer

(FS_LTE_SC_enh_hilayer, leading WG: RAN2, REL-12, started: Dec.12, target: Sep.13, WID: RP-122033)
TR 36.842 v0.3.0 (R2-133041)
See way-forward approved at RAN-61: RP-131374.

R2-133070 Reply LS on security aspects of protocol architectures for small cell enhancements; from RAN3 to RAN2; CC: SA3, CT1, SA2; Contact: NEC
=> Noted

7.2.1 User Plane Architecture Selection

Need to support CN- and/or RAN routing of traffic? Need to support bearer split in master eNB? What gains could be achieved with which alternative in terms of throughput enhancement, mobility robustness and signalling load reduction?
What is the impact on network interfaces (S1, Xn, ...)? Is the data and/or signalling load within the RAN and towards the CN increased or decreased?

Solution 1/2 vs. 3
What is the gain of bearer split?

R2-133254 Further Performance analysis on SCE Multi-flow; Samsung; Disc;
=> revised in R2-133624
R2-133624 Further Performance analysis on SCE Multi-flow; Samsung; Disc;
- MediaTek thinks that this is a very highly loaded system and they would not expect a significant increase in peak data rate but only in cell edge throughput. Ericsson agrees that it is difficult to interpret the results as it is unclear what the system load is compared to the results we saw earlier. Huawei agrees and thinks that also with existing CA we would not see gains in such a load.
- Huawei thinks that table shows the cell splitting gain and not the dual connectivity gain. Samsung would like to enable cell splitting and think that this can be ensured with Dual Connectivity as it ensures good mobility robustness. Just deploying small cells with existing means seems to lead to high RLF rates.

=> Noted

R2-133457 Considerations on the condition of throughput enhancements by inter-node UP aggregation; NTT DOCOMO, INC.; Disc;
- CMCC thinks that small cells are usually deployed in areas where the load is high. Therefore, it might not be good to look at low load cases.
- Samsung thinks that when increasing the number of pico cells per macro cell, the gain by macro for the pico cells is decreasing. Samsung expects that the bearer splitting gain will decrease then. NSN thinks that this is not only true for bearer splitting but to all scenarios. Samsung does not intend to aggregate pico and macro resources for a single UE.
- Huawei thinks that UEs at the edge of a pico cell can benefit significantly from additional resources provided by the macro cell.
- Samsung thinks that also for existing CA we only get significant gains if the cells are not fully loaded. For inter-node CA there seem to be an additional restriction that we only get

gains from bearer split if there are not too many pico cells per macro cells. There would still be a gain from dual connectivity as it allows to deploy many small cells without a risk of mobility robustness issues. Intel thinks that the macro will usually have not many resources to share with UEs that are also connected to pico cells. IDT and Huawei think that CA scenario 4 with RRHs would have the same issue.
- MediaTek supports the DCM paper and the observations therein.

Proposal 1:
- LG thinks that throughput enhancement was not the objective of this SI. It was rather to minimize the CN impact of adding small cells. DCM thinks that we are supposed to identify all possible enhancements. LG thinks that trying to achieve throughput gain is difficult and not worth the effort. NSN and Ericsson think that the reduction of CN impact is not the main goal. The intention is rather to try to ensure other benefits with as little CN impact as possible. NSN explains that the RAN TR on small cell enhancements explicitly lists throughput as one possible benefit. ALU thinks that this throughput enhancement would come at the cost of major architecture changes.
- Nokia thinks that not only throughput enhancement but also mobility robustness and CN signalling reduction is important. We should try to achieve as much of those as possible. Samsung agrees that throughput is important but it can be achieved by deploying many small cells. CMCC agrees with Samsung that throughput enhancements should come with too high costs as intra-eNB CA is already available. NSN thinks that if we do not intend to extend intra-eNB CA to inter-eNB CA, we can forget about the entire SI. NSN thinks that inter-eNB CA would bring in addition the CN signalling reduction and the mobility robustness. MediaTek agrees that throughput is the main criteria whereas signalling load is the least important. Ericsson tends to agree that we saw gains primarily in terms of throughput. For mobility robustness we saw not so much gains for scenario 2.
- NSN suggests to check whether we can agree that we choose an architecture that supports bearer split. DT agrees and would support such an architecture. KDDI agrees. Huawei agrees that bearer split is the main goal. ALU and Samsung think that such a fundamental change of the architecture will have an impact on any future feature that we introduce. Chairman thinks that all solution directions are almost equally bad in that respect. DCM thinks that operators are willing to introduce such a feature even if it brings additional complexity. ALU is concerned that some operators want bearer split as well as solution 1. That seems to make it even more complicated. Ericsson thinks that with solution 3 would introduce most of the complexity. Supporting solution 1 in addition would mainly have security impact.
- NSN thinks we need to be realistic on what is possible in Rel-12.

Informative show of hand: In the Rel-12 time frame we should …
a) Choose an architecture that supports bearer split: 18 companies
b) Choose an architecture that does not support bearer split: 17 companies

- Samsung thinks we should develop one solution with bearer split and one without and then see later which ones we cover in a WI. DT thinks that there seem to be different use cases and maybe we have to support both. Ericsson agrees that this is a possible option.

Proposal 3: “UL Data of DRBs is carried either on the MeNB-UE link or to the SeNB-UE link”
- Ericsson thinks that we could decide not to split UL data.
- DT wonders whether this would imply a TDM approach in UL. Ericsson thinks this is not necessarily implied. There could still be RLC STATUS reports and different data bearers simultaneously in UL.
- NSN is not sure it would make it simpler. NSN wonders whether it would mean that in UL we would always have 1A.
- ALU wonders whether it would be possible to have the UL bearer on either of the two or would it be always on the small cell. Ericsson thinks it could be configured per DRB.
- ALU wonders whether UL data received by the SeNB could be delivered directly to the SGW? Ericsson thinks that this would be determined by the DL solution.
- LG thinks that this restriction could help to simplify the BSR but it might be too early to decide.

=> No need to restrict now

Agreements
1 In the SI, we progress UP architectures that support operation with and without bearer split.
2 We will continue with 1A and 3C. (Security impacts to be verified with SA3 for solution 1A)

=> CB: [SCE] A draft reply LS to SA3, (CC RAN3, CT1, SA2) in reply to R2-133070 "on security aspects of protocol architectures for small cell enhancements" can be provided in R2-133641. The LS should inform SA3 that we decided to down select options 1A and 3C and request SA3's input on the feasibility of those. (NEC)

R2-133641 draft reply LS to SA3, (CC RAN3, CT1, SA2) in reply to R2-133070 "on security aspects of protocol architectures for small cell enhancements"
=> Remove "from option A and B, as mentioned in R2-133018, respectively"
=> Change S1 to S1u in the figures
=> Correct 3GPPRAN3#85 to 3GPPRAN2#85
✓ => With these changes the LS on security aspects of protocol architectures for small cell enhancements to SA3 (CC RAN3, CT1, SA2) is agreed in R2-133650

R2-133494 Further throughput evaluation and comparison of with and without UP bearer split for non-ideal backhaul; Intel Corporation; Disc;
R2-133629 Further throughput evaluation and comparison of with and without UP bearer split for non-ideal backhaul Intel Corporation Disc
not treated

Solution 3C vs. 3D

Where to terminate RLC and PDCP? Is there a need to hide losses on Xn from application layer (e.g. with RLC in MeNB) or is it sufficient to avoid that the L2 protocols stall in case of losses or re-ordering (e.g. with enhanced PDCP in MeNB)? Is push-back flow control needed and how would it work? How much data is typically queued in the SeNB? How much does this increase the latency? How to dimension the reordering timer in the UE? How does TCP perform considering the increased latency?
Is there a benefit of keeping the RLC/MAC state when adding/changing/removing secondary eNB?

R2-133091 Bottom-line gains of protocol-stack option 3D over 3C; NSN, Nokia Corporation; Disc;
not treated

R2-133416 Comparison of intra-bearer UP architectures; Ericsson; Disc;
revised in R2-133603
R2-133603 Comparison of intra-bearer UP architectures; Ericsson; Disc
not treated

R2-133099 Solution 3C vs. 3D - a UE perspective; Qualcomm Incorporated; Disc;
R2-133088 Regarding Xn Deficiencies; NSN, Nokia Corporation; Disc;
R2-133272 RLC impacts in Master-Slave RLC architectures; LG Electronics Inc.; Disc;
R2-133275 UP bearer split comparison; NTT DOCOMO, INC.; Disc;
R2-133303 Comparison of Alternatives 3C and 3D; Renesas Mobile Europe Ltd.; Disc;
R2-133332 Further Discussion on U-Plane Protocol Architecture Design Options; BlackBerry UK Limited; Disc;
R2-133401 Xn Impacts on PDCP Protocols; LG Electronics Inc.; Disc;
R2-133499 Down selection of user plane architecture options; Intel Corporation; Disc;
R2-133557 User Plane Architecture 3: Alternatives 3D and 3C; MediaTek Inc.; Disc;
R2-133573 Comparison of 3C vs 3D; Huawei, HiSilicon; Disc;
R2-133537 Throughput enhancement by bearer splitting for dual connectivity; LG Electronics Inc; Disc;
All 11 Tdocs above not treated

Solution 2/3 vs. Solution 1

How much data is passed through an MeNB and back via the transport network to the SeNB for various system loads, user distributions and pico cell deployments? Does it require significant over-dimensioning of Xn? How much more load/throughput/signalling will an eNB need to handle?
How much can be saved in terms of CN signalling with Solution 2? Is it worth the increased load on MeNB CP/UP compared to Solution 1?

R2-133493 Analysis on additional backhaul capacity for architecture option 3; NTT DOCOMO, INC.; Disc;

R2-133168 Consideration on the user plane architecture section concerning typical transport network deployment; CMCC; Disc;
R2-133572 Throughput performance of 3C given 1A's backhaul bandwidth; Huawei, HiSilicon; Disc;
R2-133526 Overload on control plane for small cell enhancement SI; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133087 Throughput Challenge; NSN, Nokia Corporation; Disc;
R2-133375 Some consideration on U-Plane Alternative 3C; CATT; Disc;
R2-133170 Analysis of Signalling Impacts by Routing Options; ETRI; Disc;
All 7 Tdocs not treated

Solution 1A/2A vs. 2C
What are the benefits/drawbacks of xA vs. xC (security, buffering, enhanced re-ordering in PDCP)?

R2-133129 Discussion on SeNB local break-out using LIPA and SIPTO@LN; Samsung; Disc;
R2-133089 SCE Security; NSN, Nokia Corporation; Disc;
R2-133344 On comparison between solutions 1A/2A and 2C; Renesas Mobile Europe Ltd.; Disc;
R2-133551 Comparing PDCP split and RLC split for impacts on SN status transfer and data forwarding during Scell change; Pantech; Disc;
R2-133552 Comparing PDCP split and RLC split for impacts on SN status transfer and data forwarding during inter-MeNB HO; Pantech; Disc;
R2-133304 The Security Issue in Architecture 1A and 2A; Panasonic; Disc;
R2-133350 Comparison between UP Architecture 2A and 2C; CATT, LG Electronics Inc., Panasonic, Intel Corporation, ITRI; Disc;
All 7 Tdocs not treated

User Plane Architecture Selection
R2-133090 Way Forward on UP Selection; NSN, HiSilicon, Huawei, KDDI, Nokia Corporation, NTT Docomo; Disc;
R2-133367 Way forward on UP architecture for dual connectivity; NEC; Disc;
R2-133554 User Plane Architecture 2; MediaTek Inc.; Disc;
R2-133237 User Plane Architecture for Dual Connectivity; InterDigital.Communications; Disc;
R2-133253 On U-plane alternative for the SCE WI; Samsung; Disc;
R2-133588 Further discussion of bearer split options; Ericsson; Disc;
R2-133549 User Plane Architecture 1; MediaTek Inc.; Disc;
All 7 Tdocs not treated

R2-133424 Further discussion of bearer split options; Ericsson; Disc;
withdrawn, see R2-133588 instead

Other
R2-133524 Discussion on support of dual connectivity and Rel-11 CA; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133525 Discussion on throughput enhancement with user plane architecture option 1A; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133398 Control of Usage of Radio Resources in Inter-node Radio Resource Aggregation; Fujitsu; Disc;
[Moved from 7.2.3 to 7.2.1]
All 3 Tdocs not treated

Late or withdrawn
R2-133092 Alternative 3D : Simplest for the UE; NSN, Nokia Corporation; Disc;
withdrawn

7.2.2 General and Control Plane Aspects

Signalling flows for e.g. SeNB addition, SeNB removal, MeNB related reconfiguration, SeNB related reconfiguration? How is SeNB configuration provided by SeNB to MeNB (via RRC IE's or by XnAP IE's)? Does the MeNB need to interpret/encode the information coming from the SeNB, or does the MeNB just include the information received from the SeNB in a container to the UE (i.e. MeNB can blindly trust the SeNB)?

Signalling Flows and Procedures
Which node initiates SCell addition, modification and release? MeNB or SeNB?

How to determine which node uses which "part" of the UE capabilities? MeNB grants a part of the UE capability (provides restrictions) to the SeNB and does not use that part until the SCell is released? Or SeNB and MeNB comprehend each other's serving cell configuration and determine what is left and how to use it?

R2-133186 SCE CP architecture, main scenarios; Samsung; Disc;
=> Noted

R2-133341 Discussion on detailed C-plane procedures; Nokia Corporation, NSN; Disc;
=> Noted

Discussion:
- Samsung thinks that the MeNB could provide a restriction within which the SeNB may then configure the UE. This would ensure that the UE capabilities are not exceeded.
- ZTE wonders whether MeNB and SeNB should share each other's configurations. If so, there is no need to define restrictions. Samsung thinks that if we define such restrictions the MeNB does not need to comprehend what the SeNB configures for the UE.
- MediaTek thinks that it seems to be quite simple to exchange the configurations done by the two nodes.
- ALU wonders how the SeNB and MeNB ensure that they use the latest UE configuration as basis for their next reconfiguration.
- Samsung thinks that we might not need an online negotiation between MeNB and SeNB.
- Samsung wonders how the MeNB could get more of the UE capabilities if we follow Nokia proposal. Nokia thinks that the MeNB could release the SeNB or an SCell or the SeNB.
- MediaTek thinks that it is important that the SeNB has sufficient independence regarding the configuration. The MeNB should not need to control everything.

MeNB Comprehends SeNBs configuration?
- Samsung thinks that this deserves some careful study. If the MeNB needs to comprehend it may put restrictions on which eNB supports which release and which features. Huawei and NSN think that the MeNB needs to be able to comprehend the SeNB's configuration. Samsung thinks that the NW does not have a release. Samsung thinks that both eNBs would need to support the same features in order to guarantee the they can really comprehend each others configurations. If there is no need, it might be good to avoid it.
- Nokia thinks that the MeNB could directly release a serving cell of the SeNB. Huawei and ZTE agree that in this case there is no reason to request the SeNB to generate the container to release the serving cell. Samsung thinks that the SeNB might need to change other things upon removal of one of its serving cells. QC thinks that the MeNB should be able to release it directly. Huawei tends to agree

Agreements

1 The MeNB maintains the RRM Measurement configuration of the UE and may, e.g. based on received measurement reports or traffic conditions or bearer types, decide to ask an SeNB to provide additional resources (serving cells) for a UE.

2 Upon receiving the request from the MeNB, an SeNB may create the container that will result in the configuration of additional serving cells for the UE (or decide that it has no resource available to do so).

3 MeNB and SeNB exchange information about UE configuration by means of RRC containers (inter node messages) carried in Xn messages.

4 The SeNB may initiate a reconfiguration of its existing serving cells (e.g. PUCCH towards the SeNB, …)

FFS whether the MeNB requests the SeNB to release a serving cell for one of its UEs and the SeNB creates a container that will result in the release of a serving cell. Or whether the MeNB can by itself release a serving cell maintained by the SeNB.

6 The MeNB does not change the content of the RRC Configuration provided by the SeNB.

It is FFS whether the MeNB needs to comprehend or may reject the RRC Container received from the SeNB)

FFS how MeNB and SeNB "share" e.g. the L1 processing capabilities

R2-133419 Overall procedures for offloading over Xn; Ericsson; Disc;

R2-133145 Discussion on control plane issues; ZTE; Disc;
R2-133185 SCE CP architecture, signalling aspects; Samsung; Disc; 36.331;
R2-133210 General signalling flow for dual connectivity; Fujitsu; Disc;
R2-133271 Handling of radio link quality degradation in the SeNB; ETRI; Disc;
R2-133309 Location of RRM functions RBC, RAC; Panasonic; Disc;
R2-133311 Location of RRM function DRA; Panasonic; Disc;
R2-133522 Discussion on the provision of SeNB configuration to the UE; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133360 How to transfer the SeNB configuration from SeNB to MeNB; CATT; Disc;
R2-133372 Signalling Flow for Main Scenarios; CATT; Disc;
R2-133373 Some consideration on functional allocation; CATT; Disc;
R2-133410 Open issues with SCE control plane architecture; Ericsson; Disc;
R2-133477 Initial radio resource configuration for Dual connectivity; Sharp; Disc;
R2-133491 Detailed signaling procedure for dual connectivity; Intel Corporation; Disc;
R2-133576 Issues in SeNB reconfiguration and SeNB change; Huawei, HiSilicon; Disc;
All 15 Tdocs above not treated

Terminology

R2-133256 Framworks for inter-ENB CA; Samsung; Disc;

Proposal 1:
- NSN thinks that so far the UE is not aware of an eNB. Maybe we should wait for the WI phase.
- LG thinks that CA is quite different from what we discuss here.
- ZTE thinks we would then have to say explicitly “intra-eNB CA” for the Rel-10 functionality.
- Samsung would like to keep commonalities with Rel-10 CA.

Proposal 2:
- Ericsson wonders whether we need to restrict now.

Proposal 7:
- Ericsson thinks that it should still be possible to have multiple TAGs in an SeNB. Samsung thinks that this would not be needed unless CA scenario 4 is used. But that would not be the case here.

- NSN suggests to discuss whether 1A and 3C will not result in different specifications but will rather be a configuration option:
  1) Bearer only served by MeNB (legacy)
  2) Bearer only served by SeNB (1A)
  3) Bearer served by MeNB and SeNB (3C)

Agreements

2 The maximum total number of serving cells per UE is 5 as for carrier aggregation.

FFS: The maximum number of TAGs per UE is 4 as for carrier aggregation.

3 Carrier aggregation is supported in the MeNB and in the SeNB, i.e., the MeNB and the SeNB may have multiple service cells for a UE.
4 MCG (Master Cell Group) is the group of serving cells associated with the MeNB.
5 SCG (Secondary Cell Group) is the group of the serving cells associated with the SeNB.
6 In Dual Connectivity a UE is connected to one MeNB and one SeNB.
7 A TAG may only comprise cells of one eNB.

FFS whether there is one PCell in the MeNB and one in the SeNB or whether there is just one PCell per UE

8 We aim to realize options 1A and/or 3C by RRC Configuration. Deviations in the protocol stack for different configurations should be limited. (we should not introduce a new specification for PDCP-SeNB)

- Ericsson thinks it should be possible to send SRB via the SeNB in order to enhance the robustness. ZTE wonders how it would improve the mobility robustness. Ericsson thinks that if the Pico Cell is configured as SeNB, it would improve mobility robustness if e.g. a handover command could be sent via the MeNB. Huawei agrees that that would be

beneficial. ALU thinks that it would not be possible with 1A. MediaTek assumes that one would typically use one SRB. Only in case of problems one could send RRC commands data via the SeNB. Intel thinks that the Macro eNB should always serve as MeNB and then there is no mobility issue. LG thinks that there is no need to send SRB via the SeNB. Samsung thinks that with 3C a packet could not be sent via the SeNB if it was not successfully transferred via the MeNB. PDCP will not take care of a retransmission.

R2-133527 Discussion on terminology of dual connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
[Moved from 7.2.4 to 7.2.2]
not treated

✉ **[LTE/SCE] email discussion [83bis#02] to capture agreements from this meeting (DCM) in**
-R2-133712 TR 36.842 v0.3.1

L2-Transport of SRBs

R2-133307 Layer 2 transport of SRBs using User Plane Architecture options; Panasonic; Disc;
R2-133244 Consideration on User Plane architecture in Control Plane aspect; ASUSTeK; Disc;
[Moved from 7.2.1 to 7.2.2]
R2-133334 U-plan Architecture Alternatives for RRC Message Transmission; BlackBerry UK Limited; Disc;
R2-133392 SRB configuration for dual connectivity; Fujitsu; Disc;
All 4 Tdocs not treated

RLF

R2-133498 Radio link failure handling for dual connectivity; Intel Corporation; Disc;
R2-133363 RLM considerations for dual connectivity; CATT, CATR; Disc;
R2-133503 RLF issues in dual-connectivity; Kyocera; Disc;
R2-133260 Radio Link Failure in inter ENB CA; Samsung; Disc;
[Moved from 7.2.3 to 7.2.2]
All 4 Tdocs not treated

Other

R2-133295 How to provide System Information in Dual Connectivity; Samsung; Disc; 36.331;
R2-133243 Measurement in dual connectivity; Potevio; Disc;
R2-133257 Possible issues on stage 3 MAC/RRC from SCE WI; Samsung; Disc;
R2-133292 Discussion on UE configuration in small cell enhancement; HTC; Disc;
R2-133365 Scope of Dual Connectivity Solution; CATT; Disc;
R2-133420 UL resource aggregation and need for UL flow control; NEC; Disc;
[Moved from 7.2.3 to 7.2.2]
R2-133529 Synchronization for inter-frequency inter-node resource aggregation; Sharp; Disc;
R2-133575 UE complexity on the supported number of carriers, eNBs, and protocol entities; Huawei, HiSilicon; Disc;
[Moved from 7.2.3 to 7.2.2]
All 8 Tdocs not treated

7.2.3 User Plane Details

Documents in this agenda item are planned to be treated in the UP session. See Annex G.

Random access procedure? Power headroom reporting? BSR, LCP? Impact on DRX? Handling of activation/deactivation? Which depend on or impact the UP architecture decision.

R2-133105 Discussion on DRX for Inter Node Radio Resource Aggregation; ITRI; Disc;
R2-133146 Discussion on UP common issues; ZTE; Disc;
R2-133208 Discussion on master-slave RLCs; Fujitsu; Disc;
[Moved from 7.2.1 to 7.2.3]
R2-133209 Flow control and QoS-aware data forwarding; Fujitsu; Disc;
[Moved from 7.2.1 to 7.2.3]
R2-133211 MAC details for dual connectivity; NSN, Nokia Corporation; Disc;
R2-133236 MAC Aspects of Dual Connectivity; InterDigital Communications; Disc;
R2-133259 Scheduling Information handling in inter-ENB carrier aggregation; Samsung; Disc;

R2-133261 Single MAC versus Dual MAC; Samsung; Disc;
R2-133269 Random Access on SCell in inter-ENB CA; Samsung; Disc;
R2-133273 Small Cell Activation and Deactivation; LG Electronics Inc.; Disc;
R2-133289 Discussion of random access procedure for inter-node CA; HTC; Disc;
R2-133310 User plane details related to the SCE user plane architecture selection; Renesas Mobile Europe Ltd.; Disc;
R2-133313 DRX procedure for dual connectivity; Panasonic; Disc;
R2-133315 Support of RACH procedure for SeNB; Panasonic; Disc;
R2-133359 Random Access Procedure for Small Cell Enhancements; ETRI; Disc;
R2-133378 UE power saving in dual connectivity; CATT; Disc;
R2-133412 Uplink scheduling and BSRs with dual connectivity; Ericsson; Disc;
R2-133431 Random Access for dual connectivity; Ericsson; Disc;
R2-133433 DRX for dual connectivity; Ericsson; Disc;
R2-133496 MAC layer aspects for dual connectivity; Intel Corporation; Disc;
R2-133523 MAC modifications with dependency on UP architecture options; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133532 Design of DRX for dual connectivity; Broadcom Corporation; Disc;
R2-133534 BSR impacts by bearer split; LG Electronics Inc; Disc;
[Moved from 7.2.1 to 7.2.3]
R2-133536 LCP impacts by bearer split; LG Electronics Inc.; Disc;
[Moved from 7.2.1 to 7.2.3]
R2-133538 Management of UE Transmit Power in Dual Connectivity; LG Electronics Inc; Disc;
R2-133539 Issunes on DRX for dual connectivity; LG Electronics Inc.; Disc;
R2-133540 Issues on Random access for dual connectivity; LG Electronics Inc; Disc;
R2-133541 Issues on BSR for dual connectivity; LG Electronics Inc; Disc;
R2-133542 DRX consideration for dual connectivity; Alcatel-Lucent Shanghai Bell, ALcatel-Lucent; Disc;

7.2.4 Challenges, Technology Potential and related input to TR

RAN2-83bis will not focus on challenges and technology potential anymore. Documents in this agenda item will be treated on best-effort basis.

- Chairman thinks we should try to capture available performance evaluations and analysis in the TR. MediaTek and DCM agree. DCM thinks we should show all aspects that we evaluated and not just the options that we finally selected. Otherwise, it would not be clear how we reached to the final conclusion.

✉ **[LTE/SCE] email discussion [83bis#12] to capture further evaluation and analysis in the TR (DCM)**

Signalling Load Reduction
R2-133264 Discussion on signaling load reduction; Samsung; Disc;
R2-133460 Mobility anchor Minimum functionality; NEC; Disc;
[Moved from 7.2.2 to 7.2.4]
R2-133500 Mobility anchor to reduce signalling load to CN without dual connectivity; Intel Corporation; Disc;
All 3 Tdocs not treated

Mobility Robustness
R2-133425 CP and UP separation; Ericsson; Disc;
R2-133531 Mobility robustness with dual connectivity; Broadcom Corporation; Disc;
[Moved from 7.2.2 to 7.2.4]
R2-133558 Control Plane Diversity; MediaTek Inc.; Disc;
R2-133559 Performance of Control Plane Diversity; MediaTek Inc.; Disc;
All 4 Tdocs not treated

Throughput Enhancement
R2-133430 TCP Performance and System Benefits of Inter-eNB Resource Aggregation; InterDigital Communications; Disc;
[Moved from 7.2.1 to 7.2.4]
not treated

UE Capabilities

R2-133265 Minimum UE capability for the scenario 2; Samsung; Disc;
R2-133318 UE Challenges of Simultaneous Dual Tx Operation; Nokia Corporation, NSN; Disc;
R2-133368 TDM based dual connectivity for single rx/tx UE; Nokia Corporation, NSN; Disc;
R2-133371 TP on small cells dual and single radio alternatives; Nokia Corporation, NSN; TP; 36.342;
All 4 Tdocs not treated

Other

R2-133342 Consideration on single connectivity based on different UP alternatives; Nokia Corporation, NSN, Huawei, HiSilicon, ITRI; Disc;
R2-133262 Identified challenges and solution directions; Samsung; Disc;
R2-133587 Increased RAN signaling load for small cell management; LG Electronics Inc.; Disc;
R2-133109 Discussion on Inter-node Radio Resource Aggregation; ITRI; Disc;
R2-133110 Views on Handover Command with RRC Diversity; ITRI; Disc;
R2-133111 Views on Radio Link Problem in SeNB; ITRI; Disc;

7.3 WI: BeiDou Navigation Satellite System (BDS) for LTE

(LCS_BDS-LTE-Core, leading WG: RAN2, REL-12, started: Mar 13, target: Mar 14, WID: RP-130416)
Including output of [83#11][Joint/BDS] Open issues on BeiDou and LTE CR (CATR)

R2-133287 Summary of email discussion [83#11] Open issues on BeiDou and LTE CR; CATR; Report; result of email discussion [83#11]; CR is prepared in R2-133285;

ISSUE 1: How to define codePhase in GNSS-AcquisitionAssistElement IE to support BDS?
Conclusion: It is unnecessary to change codephase definition for supporting BDS.
ISSUE 2: How many IGPs are allowed to be sent to UE?
Conclusion: Up to 16 IGPs are enough. The number of IGPs sent to the UE can be decided by the NW, i.e. the NW could send less than or equal to 16 IGPs information to the UE.
ISSUE 3: Inclusion of BDS in AT commands specification TS 27.007
Conclusion: Incorporate BDS into TS 27.007 after completing GERAN supporting BDS position.

Proposal 3:
- Intel thinks that once the stage-3 CRs have been completed we could inform CT1 and ask them to update 27.007 accordingly.

=> Noted

Agreements
1 It is unnecessary to change codephase definition for supporting BDS.
2 Up to 16 IGPs are sufficient. The number of IGPs sent to the UE can be decided by the NW, i.e. the NW could send less than or equal to 16 IGPs information to the UE.

=> We see no need for updating TS 27.007 at this point in time. It could possibly be done after completing work BDS positioning for GERAN.

R2-133285 Stage 3 CR of TS 36.355 for introducing BDS in LTE; CATR, CATT, ZTE; CR; 36.355; B; result of email discussion [83#11];
=> revised in R2-133700

R2-133700 Stage 3 CR of TS 36.355 for introducing BDS in LTE; CATR, CATT, ZTE; CR; 36.355; B; result of email discussion [83#11];
- NSN thinks that we should add square brackets for the newly added extensions. Intel agrees that this should be done in sequence structures but no need in Choice structures. QC thinks that in 36.355 there is only one occasion so far where the double brackets were used. Samsung thinks that without the square brackets every optional field will get a wrapper. If the square brackets are used, the entire extension gets one wrapper.

=> Add square brackets for the newly added extensions in SEQUENCE structures.
- Intel suggests to clarify in the field description of gridIonList that at most 16 code points can be used.

=> Clarify in the field description of gridIonList that at most 16 code points can be used
- NSN suggests to define a type for value ranges that appear multiple times (such as e.g. bdsAlmW-r12).

=> CB: [BeiDou] An updated CR can be provided in R2-133706 (CATR)

R2-133706 Stage 3 CR of TS 36.355 for introducing BDS in LTE; CATR, CATT, ZTE; CR; 36.355; B; result of email discussion [83#11];
=> revised in R2-133716

R2-133716 Stage 3 CR of TS 36.355 for introducing BDS in LTE; CATR, CATT, ZTE; CR; 36.355; B; result of email discussion [83#11];
=> CR is in principle agreed

- ZTE reports that there don't seem to be any significant RAN2 issues left for BeiDou. Intel agrees that we are done and think we should hand over RAN3.

=> Rapporteur will inform RAN3 about the progress in RAN2 (in particular about UMTS aspects) and we assume that RAN3 will resolve their aspects.

7.4 WI: Further Downlink MIMO Enhancement for LTE Advanced

(LTE_eDL_MIMO_enh, leading WG: RAN1, REL-12, started: Sep 12, target: Sep 13, WID: RP-121416)
RRC CR was in-principle-agreed at RAN2-83 and should be re-submitted to RAN2-84.

No contributions.

7.5 SI: LTE Device to Device Proximity Services - Radio Aspects

(FS_LTE_D2D_Prox, leading WG: RAN1, REL-12, started: Dec 12, target: Mar 14, WID: RP-122009)
RAN1 TR 36.843 on D2D
Note: RAN-61 endorsed the Public Safety related use-case priorities for Rel-12 in RP-131377 (provided in LS RP-131405)

R2-133062 LS on Agreements from TSG RAN on work on Public Safety related use cases in Release 12 (RP-131405; contact: Alcatel-Lucent); RAN; LSin; to: RAN2;
[Moved from 3.2 to 7.5]
=> Noted

R2-133064 LS on Public Safety UE-Network Relays (S2-133808; contact: Vodafone); SA2; LSin; to: RAN2; ProSe = Proximity-based Services;
[Moved from 3.1 to 7.5]

- Vodafone thinks that this is in the priority list and we should be able to provide a first reply to SA2 as soon as possible. Samsung thinks that the intention seems to be to create a PC5-based cell rather than a D2D link. That seems to be quite new and not in the scope of any of the contributions submitted to this meeting. Companies in RAN2 seem to have a very simple connection less communication in mind and that seems to be far away from what SA2 outlined on PC5-based PC9 relay. QC agrees with Samsung that for such a solution one would need all kind of broadcast and that is not at all in the scope of PC5. QC thinks we could discuss which existing relay functionality we could re-use but we should not introduce this new concept. DT also agrees. ZTE also agrees. Vodafone thinks we should answer the technical questions rather than saying that we will not work on this. ALU agrees with the other companies' analysis. ALU thinks that SA2 could do their own analysis if they have time and we could then consider analysing whether we agree.
- Samsung thinks that the input from RAN to SA mentions only Rel-10 Relays. Samsung thinks that there are also other relay concepts discussed in SA2 that are based on higher layer functionality. Even if we don't work on this PC9 version, there can still be other relay types.
- DT thinks that we should not focus on the relays but rather on the things that are more important. Orange agrees with DT and thinks that we should keep in mind that there are other relay solutions. TI does not have a strong opinion on the alternative opinion but would be fine to try to reply to some of the technical questions.

=> CB: We will reply that we are just starting to design the PC5 interface. At this stage the focus has not been on creating cell-like operation of a relay with this interface. Given the priority chosen by RAN plenary (REF), RAN2 will focus on communication in- and out of coverage before being able to study relay solutions further. RAN2 would also like to refer

to the reply sent by RAN plenary to SA indicating that “RAN has not planned any further work on this so far in Rel-12” and that “that if the UE to NW relay were a Rel-10 RN, then from a UE point of view, normal service mobility mechanisms would be applicable”. It could be investigated whether that solution could be re-used in this context. A draft reply LS can be provided in R2-133642 (Vodafone)

=> We can consider discussing this further if we know better how the PC5 itself will look like.

R2-133642 Draft Reply LS on Public Safety UE-Network Relays; to SA2; CC (see incoming LS); Contact: Vodafone

- DT wonders whether any of these aspects has been discussed in RAN2. Vodafone thinks we could provide this input to SA2. LG agrees with DT that the draft LS does not capture what we agreed during the meeting according to the chairman notes. NEC would also suggest to remove the bullets. Orange thinks that the LS is not in line with the chairman notes.
- Vodafone thinks that Relays have high priority.

=> CB: [D2D] An updated draft LS on Public Safety UE-Network Relays can be provided R2-133713 (Vodafone)

R2-133713 Draft Reply LS on Public Safety UE-Network Relays; to SA2; CC (see incoming LS); Contact: Vodafone

- QC would suggest to add that: RAN2 would also like to refer to the reply sent by RAN plenary to SA indicating that “RAN has not planned any further work on this so far in Rel-12” and that “that if the UE to NW relay were a Rel-10 RN, then from a UE point of view, normal service mobility mechanisms would be applicable”.

✓ => The LS on Public Safety UE-Network Relays; to SA2 is agreed in R2-133720

7.5.1 Device discovery

Input to RAN1 TR

R2-133495 Capture agreements of RAN2 #83 meeting in TP for the RAN1 TR 36.843; Qualcomm Incorporated; TP; 36.843; TR 36.843 is a RAN1 TR;
[Moved from 7.5.2.2 to 7.5.1]

=> Will be incorporated into the revision of R2-133488, i.e. in R2-133644

R2-133488 D2D TR Skeleton proposal; Qualcomm Incorporated; TP; 36.843
[Moved from 7.5.2.2 to 7.5.1]

=> Endorsed as structure for RAN2 input

=> Will include earlier agreements as captured in R2-133495

=> Will be used as baseline and we will capture further agreements from this meeting

=> CB: [D2D] An update can be provided in R2-133644 (QC)

R2-133644 TP for TR 36.843 on D2D including RAN2 agreements

=> will be revised in R2-133699 during the email discussion

✉ **[LTE/D2D] One week email discussion [83bis#03]: TP for TR 36.843 on D2D including RAN2 agreements (QC)**
- final version can be provided in R2-133699
- an LS to RAN1 can be provided in R2-133726

Message Flow and Interaction with NAS

What information needs to be carried in discovery beacons/messages? How does the transmitting UE obtain it? How long is it valid? How does a UE interpret a received beacon/message? Standardized content (e.g. application IDs)? Or need to do a lookup (towards RAN or CN) for UE ID? Lookup for every reception or valid for longer?
Can NAS ensure open/restricted discovery by restricting the lookup (authorization/authentication).
Will higher layers provide ciphering/integrity? Is replay protection needed? If so, how? Ask SA3?
Will higher layers provide all required identifiers? Or should RAN2 protocols add such information (e.g. short temporary ID for scrambling? Other header fields)?
How does the protocol stack look like? Which functions are needed?
Clarify message/data flows? Is there a need for a PULL model or only a PUSH model.

R2-133461 Discussion of D2D Open Discovery and Supporting Messages; BlackBerry UK Limited; Disc; revised in R2-133643

R2-133643 Discussion of D2D Open Discovery and Supporting Messages; BlackBerry UK Limited; Disc;

- DT assumes that the payload of the beacon is completely transparent for the access stratum. Therefore, we don't need to think about ciphering and integrity protection. QC agrees. ZTE thinks that there are other options discussed in SA2. Vodafone agrees with ZTE that it could also have a standardized meaning. Huawei agrees that it cannot be transferred transparently as it would allow transmitting random information. TI thinks that we could consider whether it is beneficial to add AS based information. TI thinks we should first design a connected mode solution before looking into IDLE.
- IDT thinks that we should not focus on the PHY part but rather on the message itself. IDT thins that the message should be transparent for AS. DT thinks that bits in the beacon may be standardized but that will not be part of the AS functionality, i.e., transparent from AS point of view.
- Samsung thinks that the UE would Connect in order to request from a CN server the meaning of a received discovery beacon. Once it has obtained the information, it may be able to store this information/mapping (e.g. for a give validity time). If it knows the meaning of a received beacon, it does not need to enter CONNECTED the will therefore be able to receive beacons also while in IDLE.
- Huawei, ZTE and Vodafone think that the content of the beacon might not be transparent to the RAN/AS. Chairman suggests that we assume as baseline that the beacon content is transparent. We can of course still find out that some AS protocol information needs to be transferred. LG would support this.
- Nokia thinks that if we require UEs to be CONNECTED when transmitting beacons, it would need to be in CONNECTED almost continuously
- DT thinks that there is no need for ciphering or Integrity Protection in access stratum. QC thinks that SA3 agreed on time hashing to ensure that replay attacks are not possible. Samsung thinks that for the reply attack there might actually be AS impact and we should wait for SA3. ZTE agrees.
- Huawei thinks that we need to distinguish open and restricted at least by means of a flag. DT thinks that this only needs to be distinguished on higher level. Samsung agrees that there is no difference on Access Stratum behaviour but it could be good to have some filtering on low level if possible. Chairman thinks that a UE might know what a restricted beacon means but might not know what a open beacon means. DT agrees that we do not need to distinguish on AS.

=> Noted

Agreements

1 It is possible for UEs to **receive** D2D discovery message while being IDLE and CONNECTED.
2 If the UE cannot interpret (in AS or higher layers) the **received** D2D discovery message it may or may not establish an RRC Connection in order to verify the content e.g. with an application server.
3 No need to distinguish PUSH and PULL model on Access Stratum. (We assume that a mechanism to trigger transmission of a D2D discovery message upon reception of another D2D discovery message can be realized by higher layers if a need is identified (up to SA2 to discuss))
4 We do not distinguish open and restricted discovery on access stratum level.

=> We wait for input from SA3 whether or not the access stratum needs to support ciphering or integrity protection. No need to discuss in RAN2 until we received further input from SA3.

R2-133513 Protocol aspects for D2D discovery; Intel Corporation; Disc;
R2-133156 Clarification on scenarios for ProSe direct discovery; Broadcom Corporation; Disc;
R2-133203 Discussion on the data flow for D2D discovery; ZTE Corporation; Disc;
R2-133207 Radio Signaling Flows for D2D Direct Discovery; Samsung Electronics; Disc;
R2-133212 Functional Allocation between AS and Higher Layers for direct disocvery; Samsung Electronics; Disc;
R2-133213 Discovery Protocol Structure; Samsung Electronics; Disc;
R2-133217 Discovery mode and data flow for D2D discovery; CATT; Disc;
R2-133380 Discussion on discovery information and protocol layers; Nokia Corporation, NSN; Disc;
R2-133381 Discussion on discovery type verification for D2D; Nokia Corporation, NSN; Disc;
R2-133400 RAN2 Aspects of D2D PUSH or PULL Discovery models; ETRI; Disc;
R2-133483 D2D Discovery Radio Protocol Architecture; Qualcomm Incorporated; Disc;

R2-133502 Functional Split with Access Stratum and Higher Layers for D2D Discovery; InterDigital Communications; Disc;
R2-133511 RAN2 considerations for Proximity Discovery; Huawei, HiSilicon; Disc; [Late]
R2-133581 Preliminary UE design example for D2D discovery; LG Electronics Inc.; Disc; [Moved from 7.5.2.2 to 7.5.1]
R2-133585 Two approaches for D2D discovery procedure; LG Electronics Inc.; Disc;
All 15 Tdocs above not treated

Resource allocation and RRC State

a) May a UE in NW coverage transmit beacons in IDLE? Or does it have to be in CONNECTED? What are the benefits of supporting IDLE mode?
b) Should a UE in NW coverage receive beacons in IDLE? Or does it have to be in CONNECTED? What are the benefits of supporting IDLE mode?
c) To which extent should the NW (RAN?) assist UEs to transmit or listen to beacons at the right point in time? Or should the NW allocate a "block" of resources which admitted UEs transmit on in contention based fashion.
d) Should D2D discovery resources be coordinated across cells? To avoid overlap and resulting collision? Or to enforce overlap to that UEs can detect UEs located in neighbour cells.

R2-133482 D2D Discovery; Qualcomm Incorporated; Disc;

- Huawei thinks that this is more RAN1 scope. QC thinks we should also look into this in RAN2 to investigate complexity and efficiency. QC evaluated the allocation types specified in RAN1. QC assumed that the messages are transmitted once every 10 seconds.
- QC explains that the power consumption for the transmitter side is independent of the number of UEs. But the received power consumption increases with the load as the resource is increased and consequently UEs have to listen longer. IDT wonders how the eNB is aware how many resources are used. QC thinks this would be up to eNB implementation. IDT is not sure how that would work.
- Ericsson wonders about the capacity of the two schemes. QC has considered collisions for Type 1 when determining the resource block utilization. They targeted a certain maximum collision rate and investigated how many resources are needed to achieve that for every load point.
- Intel wonders whether QC assumed that the UE needs to be in Connected mode for Type 2. QC assumed for type 2b that the UE enters connected and stays connected. Connection establishment signalling as well as mobility signalling is taken into account. QC agrees that the UE could in principle release the RRC Connection once it has obtained the semi-static allocation. But once it moves to another cell, it would have to establish a connection in order to get a new resource allocation.
- After offline discussions QC reports that companies agree that UEs should be allowed to perform discovery transmission in IDLE mode and that we should indicate to RAN2 that from RAN2 point of view Type 2a mode would consume a lot of resources for accommodating the control signalling.
- Huawei thinks that there are other use cases in which Type 2a would be better. In particular if a UE sends beacons rarely. Huawei thinks that Type 2a could be applicable for UEs that have received a discovery event and need to reply to it. LG does not see any benefit from Type 2a. Huawei thinks it is faster with Type 2. Samsung doubts that given that the UE first needs to establish a connection and request a resource. Huawei thinks that the speed of discovery could be important.
- Ericsson wonders whether it is good to allow UEs to transmit beacons in IDLE mode. Charging would need to be solved. LG thinks that can be ensured by higher layers also in IDLE.
- TI thinks that the NW needs to be in control of the resources.
- Ericsson does not agree to the second agreement on resource consumption. Huawei agrees with Ericsson that it is currently unclear what we base this agreement on. At least the message flow would need to be detailed. Nokia would prefer to keep it. LG supports it as well. Samsung supports it as well. Ericsson thinks that it is premature to conclude that Type 2 does not give any benefits.

=> Noted

Agreements
1 Transmission of discovery messages should be supported in IDLE mode and in Connected mode. In both modes the UE needs to be allowed by the NW to transmit

these messages. The NW needs to be in control of the resources and transmission mode (CONNECTED and/or IDLE) that the UEs may use to transmit Discovery signals. The details (Type 1 or Type2; SIB or dedicated) are FFS.

=> Should discuss further whether we can conclude anything on resource efficiency of Type 1 vs. Type 2.

R2-133278 Comparison of Type 1, Type 2a, and Type 2b Discovery Resource Allocation; Huawei, HiSilicon; Disc;
R2-133112 On Discovery Type and RRC Mode in the LTE Device to Device Discovery; ITRI; Disc;
R2-133196 Discovery in RRC_IDLE; General Dynamics Broadband UK; Disc;
R2-133204 Considerations on UE RRC state; ZTE Corporation; Disc;
R2-133215 UE state for D2D Direct Discovery; Samsung Electronics; Disc;
R2-133214 Resources for D2D Direct Discovery; Samsung Electronics; Disc;
R2-133216 Considertaions on D2D Discovery; CATT; Disc;
R2-133239 Discovery for Device to Device Communication; Motorola Mobility; Disc;
R2-133379 Discussion on D2D discovery models; Nokia Corporation, NSN; Disc;
R2-133382 Discussion on idle mode UE discovery; Nokia Corporation, NSN; Disc;
R2-133393 Discussion on the ProSe direct discovery; Fujitsu; Disc;
R2-133485 Discussion on D2D discovery; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133501 Support of Device-to-Device Discovery in IDLE mode; InterDigital Communications; Disc;
R2-133512 Resource allocation for D2D discovery; Intel Corporation; Disc;
R2-133580 Issues in D2D discovery; LG Electronics Inc.; Disc;
All 15 Tdocs above were not treated

7.5.2 Communication

7.5.2.1 Medium Access Control

Coordinated Access or CSMA? Difference in performance/capacity? Difference in complexity?
a) Need for a central control entity when out-of-coverage? If so, is it still "out-of-coverage"? Or use uncoordinated access?
b) Need to control transmission/reception when in-coverage? Fully scheduled? Or semi-persistently allocated resources? How does it work if one UE is in coverage and one is out of coverage?

R2-133155 Difficulties to implement CSMA-like MAC in D2D communication; Huawei, Hisilicon; Disc;
- IDT wonders whether Huawei assumes that there will always be an eNB or a CH? Huawei thinks that there is no reason to assume that there are cases without CH or eNB in control. Huawei thinks that a CH functionality allocating dedicated resources would still be simpler than a full eNB Uu interface. Ericsson shares this view. Samsung thinks that the paper seems to assume that the CH performs as well as an LTE eNB (Figure 3 vs. 4). Huawei here just would like to show that scheduled transmission is generally better than non-scheduled.
- ZTE wonders whether the performance that a contention based solution offers might actually be sufficient while being much simpler than a fully scheduled scheme.

=> Noted

R2-133486 Access schemes for D2D broadcast communications; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
- ALU thinks that some kind of partitioning of the contention based resources among user groups could be supported.
- ALU also thinks that one could consider that the contention based access is used to reserve subsequent transmission resources but have not further evaluated that.
- QC thinks that there are contributions showing that depending on the traffic pattern the contention based transmission may actually perform better.
- Huawei wonders whether the UE has to contend for each subframe or whether it may transmit for a longer time once it won contention. ALU assumes it is contending for a group of subframes.
- ZTE wonders how the pre-allocation of resources would work out of coverage?
- ALU proposes to use this for out of coverage (which is the main use case) but also for in coverage. Orange thinks we should first look at in-coverage. ZTE thinks we should concentrate on out-of-coverage but does not think that it necessarily possible or good to use the same solution out- and in-coverage. Vodafone also agrees that the focus is on

out-of-coverage. TI thinks that if we start with out-of-coverage, we might have two solutions in the end. Huawei agrees with TI. LG thinks that we should focus on out of coverage.
- Orange and TI think we cannot look at out-of-coverage and in coverage separately. CMCC thinks we don't necessarily need the same solution for in- and out of coverage.
- GSB and Huawei think that we cannot agree that there will not be a node performing dynamic scheduling out of coverage. Intel also does not agree on this given that RAN1 is still discussing it. Intel thinks that if there is a central node for synchronization we could also use it for dynamic scheduling.
- Vodafone wonders whether a UE in coverage of a relay would be consider to be in or out of coverage.

=> Noted

R2-133177 Operator view on network control for Public Safety D2D Communications; Orange; Disc; revised in R2-133702
R2-133702 Operator view on network control for Public Safety D2D Communications Orange Disc not treated

R2-133198 Issues surrounding the use of a connectionless approach to providing LTE D2D communications; General Dynamics Broadband UK; Disc;
R2-133205 Considerations on the resource allocation mechanism for D2D discovery and communication; ZTE Corporation; Disc;
R2-133218 Resource Allocation Schemes for Direct D2D Communication; CATT; Disc;
R2-133235 RAN2 Aspects of Broadcast Transmission for D2D Communication; InterDigital Communications; Disc;
R2-133270 Overall procedure of fully scheduled allocation; ETRI; Disc;
R2-133300 Realization of D2D broadcast communication; Ericsson; Disc;
R2-133370 Discussion on D2D communication; III; Disc;
R2-133464 General aspects on Centralized Allocation approach; NEC; Disc;
R2-133510 RAN2 considerations for D2D communication; Huawei, HiSilicon; Disc; [Late]
R2-133514 On medium access control for D2D broadcast transmission; Intel Corporation; Disc;
R2-133569 Resource allocation schemes for D2D communication; Kyocera; Disc;
All 11 Tdocs above not treated

Late or withdrawn
R2-133197 Issues surrounding the use of a connectionless approach to providing LTE D2D communications; General Dynamics Broadband UK; Disc;
withdrawn

7.5.2.2 Other

What do the message/data flows look like? What information comes from which layer? Need for group and identity management on L2/3? Or is all that handled by higher layers?
Need for establishing "RRC connections" between communicating devices? Or between a control node and transmitting/receiving D2D devices?
Which parts of the protocol stack to keep/remove? PDCP? Is header compression needed and would it work without return path? Is security provided by higher layers? Is it pre-configured? Are RLC TM and UM sufficient? Is there a need for RLC AM? How would it work for lower layer working in 1:M more?

Required Protocol Functionality
R2-133326 Initial discussion on D2D communication protocol; Samsung; Disc;
- IDT thinks that we are considering broadcast and therefore there cannot be any feedback. IDT wonders whether we really need these protocol layers.
- Huawei wonders why we would remove HARQ but then consider whether we need something else. Samsung thinks that one could consider a repetition mechanism if that is considered required and more feasible than ARQ like solutions.

=> Noted

R2-133484 D2D Broadcast communication for Public Safety; Qualcomm Incorporated; Disc;
- LG wonders whether we really need an RRC State if we assume that the mechanism is connection-less.

- LG thinks that HC is efficient for VoIP services and should be supported for D2D.
- LG could imagine that some kind of repetition mechanism with soft combining similar to BCCH could be used instead of HARQ.
- GDB thinks that we don't necessarily need IP. QC thinks that today every data communication is IP based. GDB thinks that with U-mode new group members would need to wait for a complete packet until they are able to decompress. LG thinks that by transmitting sufficiently many full headers it can be guaranteed that also new members can decode. Samsung agrees. Huawei wonders whether U-Mode is a good choice. Samsung wonders what other choice we have. Huawei thinks we could consider feedback.
- ZTE thinks we should try to agree that D2D communication is one-way and there is no feedback on L2. Huawei thinks that there might be a need for feedback. ZTE thinks we should focus on a broadcast-like 1:M transmission. Ericsson thinks for the 1:M case we don't need feedback and therefore agrees with ZTE. Ericsson could imagine that at a later point in time we could optimize for 1:1 and then also introduce some kind of feedback. QC agrees as well. Samsung agrees as well to this baseline. LG agrees and would like to have this baseline as well.

=> Noted

Agreements

1 As baseline we assume that from L2 point of view, 1:M D2D communication is one-way and there is no feedback on L2 (MAC/RLC/PDCP)

PDCP:

2 D2D communication data should be handled as the normal user-plane data, i.e. IP packet

3 Header-compression/decompression in PDCP is applicable for D2D communication. U-Mode is used for header compression in PDCP for D2D broadcast operation for public safety.

4 Security support will be addressed based on input by SA3.

RLC:

5 RLC UM is used for D2D broadcast communication.

5b So far no need has been identified for RLC AM or RLC TM for D2D communication for user plane data transmission.

MAC:

6 No HARQ feedback is assumed for D2D communication

RRC / Connection Handling:

7 A D2D UE does not establish and maintain a logical connection to receiving UEs prior to a 1:M data transmission.

FFS how resources are allocated
FFS how the UP protocol stack is configured
FFS how group management is performed and whether additional group or user IDs are required in e.g. MAC.

R2-133107 Discussion of Layer 2 level ProSe Grouping Function; ITRI; Disc;
revised in R2-133591
R2-133591 Discussion of Layer 2 level ProSe Grouping Function; ITRI; Disc;
not treated

R2-133206 User Plane aspects for D2D communication; ZTE Corporation; Disc;
R2-133219 Protocol stacks for D2D communication; CATT; Disc
R2-133245 Discussion on ProSe-enabled UE functionality; ETRI; Disc;
R2-133301 Other aspects of D2D broadcast communication; Ericsson; Disc;
R2-133335 PDCP and RLC support for 1-to-M communication; LG Electronics Inc.; Disc;
R2-133345 Discussion about L2 for ProSe; Renesas Mobile Europe Ltd.; Disc;
R2-133450 Functional framework for D2D over LTE; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133452 RRC states for D2D; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-133453 Detailed analysis of the LTE L2 protocol and functions for D2D; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;

All 9 Tdocs above not treated

Relays

R2-133324 Relay for D2D communication; Samsung; Disc;
R2-133566 Relay Node for Public Safety Communication; Institute for Information Industry (III); Disc;
R2-133578 Way fowrard for D2D Relay; LG Electronics Inc.; Disc;
All 3 Tdocs not treated

Other

R2-133489 ProSe Functional split; Qualcomm Incorporated; Disc;
R2-133454 Scenarios and requirements for Public Safety; Telecom Italia; Disc;
R2-133322 Text proposal for D2D communication flow; Samsung; TP; 36.843; TR 36.843 is a RAN1 TR;
R2-133579 Issues in D2D communication; LG Electronics Inc.; Disc;
R2-133583 Primary goal of D2D communication; LG Electronics Inc.; Disc;
All 5 Tdocs not treated

Late or withdrawn

R2-133327 Resource selection for D2D communication; Samsung; Disc;
[Late]
not treated

R2-133515 Protocol aspects for D2D broadcast communication; Intel Corporation; Disc;
[Late]

7.6 SI: Group Communication for LTE

(FS_LTE_GC, leading WG: RAN2, REL-12, started: Sep 13, target: Mar 14, WID: RP-131382)
Note: RAN-61 endorsed the Public Safety related use-case priorities for Rel-12 in RP-131377 (provided in LS RP-131405)
The goal of this short SI is to evaluate the ability of LTE to meet the public safety requirements agreed in SA groups for Group communication when distributing the same content to many public-safety-capable UEs using unicast or eMBMS. No need to propose enhancements unless RAN2 concludes that the requirements cannot be met otherwise.

R2-133066 LS on GCSE with eMBMS (S2-133846; contact: NSN); SA2; LSin; LS02; to: RAN2;
[Moved from 3.1 to 7.6]
- LG thinks that service continuity related questions are not really for RAN2.
- LG wonders whether SA2 considered single cell broadcast as in important case. Anyway LG thinks that an MBSFN area could comprise just one cell if that is considered useful.

=> We will try to answer from this meeting, see R2-133714

Requirements

R2-133520 Discussion on technical aspects to be focused in group communication for LTE SI; Alcatel-Lucent; Disc;
Requirement 2:
- ALU clarifies that these are coming from the Tetra requirements.
- Chairman wonders whether “Time to join” should comprise the paging. ALU does not think so.
- NSN thinks that end-to-end media delay means speaker to listener. Huawei agrees.

Requirement 3:
- Samsung wonders whether there are any more specific numbers.

Requirement 4:
- CATT wonders whether this is more about interruption times or packet loss. Huawei thinks that the interruption time is most important.
- Samsung wonders whether there is any assumption on the available frequencies and whether there are one or more carriers. ALU thinks that different deployment scenarios could occur.
- LG wonders whether the eNB needs to know to which group the UE belongs. ALU thinks that this can be left to the application layer. NSN thinks we should focus on whether the radio interface can fulfil the requirements. NSN agrees that the group management is transparent for the RAN.

- NSN wonders whether we need to copy these requirements into the TR given that they are just copies from SA1. ALU tried to filter the requirements that have an impact on RAN. Huawei agrees that it could be good to focus on the requirements that have an impact on the RAN.
- QC thinks that most of the requirements are actually just a guideline.

=> Clarify that we assume that the end-to-end media delay covers speaker to listener delay.
=> Can capture the requirements in the TR.
=> Noted

R2-133447 Discussion on group communication scenarios and requirements; Huawei, HiSilicon; Disc;
R2-133169 Discussion on prioritized group communication items and their requirements; CMCC; Disc;
R2-133241 Considerations on Group Communication; CATT; Disc;
All 3 Tdocs not treated

R2-133446 Discussion on group communication scenarios and requirements; Huawei, HiSilicon; Disc; withdrawn

Evaluation - Unicast

What is the latency in UL and DL? Is it necessary to setup a dedicated bearer for carrying PTT (Voice)? Should it be a GBR bearer? Can it be kept established for as long as the UE is registered with the GC Application Server?
Can unicast transmission be used to distribute the same content using unicast, to many public-safety -capable UEs? What is many? In what "area"? How many cells has such an area? At which data rate?

R2-133516 Discussion on RAN impacts of use of unicast bearers for group communication; Alcatel-Lucent; Disc;
Proposal 1:
- QC thinks that a new QCI could be used to account for the different traffic pattern in the admission control. NSN thinks it could be difficult to ensure that admission control works efficiently.
- ALU thinks that typically just one member of a group would be talking. QC thinks that usually there will be much more receivers than transmitters in a group.
- ZTE sees no need to keep GBR bearers established continuously if we see that it would also be possible to set them up when they are needed.
- Chairman thinks that if establish and keep GBR bearers for all possible group receivers, we will block many resources in the cell that can then not be used for other lower priority traffic. QC thinks that we do not need to disallow the NW behaviour where GBR bearers are kept continuously.

Proposal 2:
- QC agrees that VoIP packets could be sent on the default bearer

Agreements
1 If GBR bearers are kept established during long idle periods of the PTT service, other GBR bearers (e.g. commercial Voice) may be rejected by admission control.

FFS: Can discuss further whether PTT Voice needs to be carried on a GBR bearer. Can also discuss whether establishment delay of a GBR bearer would be fast enough and if not, whether the offered QoS of default bearer is acceptable for delivery of PTT voice for the short period of time over the default bearer

R2-133519 Analysis of unicast support for group communication; Alcatel-Lucent; Disc;
=> Noted

Agreements
1 The end to end setup delay requirement (300 ms) for group communication via a dedicated bearer can be met using LTE. It is not necessary to pre-establish bearers or the RRC Connection.
2 The time to join an ongoing group communication requirement (300 ms) can be met using LTE without a pre-established radio bearer and also for UEs in IDLE.
It is however assumed that user is already registered with the public safety application server and obtained the application layer security authentication.
3 End to end delay for media transport requirement can be met using LTE unicast

bearer for media transmission.

=> Should capture also the analysis shown in R2-133519

R2-133395 GCSE requirements fulfilment for Unicast; Huawei, HiSilicon; Disc;
not treated

=> Can think further about VoIP capacity. Try to re-use results of TR 36.912

R2-133441 Requirements for Group Communication; Ericsson; Disc;
=> not treated

Evaluation - MBMS

Can eMBMS be used for public safety applications? What are the session setup delays? What is actually a session? Just a talk-spurt? Or does it typically last very long? Can MBMS bearers be kept established?
How many groups need to be served via eMBMS? How many groups have many users? How many groups have many users that are also in the same cell?

R2-133535 Group communication over eMBMS; Qualcomm Incorporated; Disc;
=> revised in R2-133707

R2-133707 Group communication over eMBMS; Qualcomm Incorporated; Disc;
Observation 3:
- QC thinks that a procedure was captured in the SA2 TR where the UE decides to request reception via unicast if the received signal quality of the MBSFN transmission is getting weak. QC assumes this would be based on UE implementation. ALU agrees. CATT is concerned that it might not be sufficient to leave this up to UE implementation.

Observation 4:
- ZTE thinks that one has to use the maximum possible MSP latency of 80 ms.

=> Update “MSP (Read MSI)” in the table to 80ms.
=> Remove the components for the UL transmission from the UE to the BMSC.
=> With these changes, sections 2 and 3 (except for 3.2 and 3.3) can be incorporated into the TR and clarify that this assumes pre-established MBMS bearers.
=> Noted

R2-133187 Use of MBMS to support Group Communication; Samsung; Disc;
Finding 3:
- NSN wonders whether it is possible to dynamically create MBSFN areas. Samsung thinks that if one MCE controls a whole area it is possible to setup MBSFN areas dynamically. There is just no interface defined among MCEs.
- ZTE wonders whether it is OK that UEs need to be connected in order to be counted. Samsung understands that these UEs would actively be involved in group calls while receiving via unicast. Then, the eNB could count them and decide whether or not to establish an MBMS bearer. Is not sure whether it is really required to setup and release MBMS bearers. Maybe they could be kept established. Huawei thinks that if there is no UE of a certain group in a cell it would really be inefficient to keep the MBMS bearer established.

=> Can add description of “An MBMS based solution using PTP upon session start can support the required establishment delay requirement” according to section 2.3 to the TR.
=> Can think about how the “pre-established bearer” and the “use PTP while establishing” could be used together depending on service and user movement.
=> Can also think further about service continuity when changing between PTP and PTM.

R2-133556 Considerations on meeting public-safety group-communication requirements with LTE MBMS; NSN; Disc;
R2-133142 GCSE architecture and its influence on RAN solutions; ZTE; Disc;
R2-133358 Use of eMBMS for Group Communication; LG Electronics Inc.; Disc;
R2-133396 GCSE requirements fulfilment for eMBMS; Huawei, HiSilicon; Disc;
R2-133517 Analysis of service continuity requirement for group communication; Alcatel-Lucent; Disc;
R2-133518 Analysis of support for group communication using eMBMS; Alcatel-Lucent; Disc;
R2-133199 Use of eMBMS for Group Communication; General Dynamics Broadband UK; Disc;
All 7 Tdocs not treated

Reply LS

R2-133543 Discussion on GCSE with eMBMS and related questions from SA2 LS; Intel Corporation; Disc; ; related to SA2 LS R2-133066 = S2-133846;

R2-133601 Discussion on GCSE with eMBMS Qualcomm Incorporated Disc

R2-133600 Draft reply LS to S2-133846 = R2-133066 on GCSE with eMBMS (to: SA2; cc: -; contact: Qualcomm) Qualcomm Incorporated LSout
All 3 Tdocs not treated

=> CB: [GC] A draft reply LS to SA2, RAN1,3,4 can be provided in R2-133714 (QC)

R2-133714 Draft reply LS to S2-133846 = R2-133066 on GCSE with eMBMS (to: SA2; cc: -; contact: Qualcomm) Qualcomm Incorporated LSout
=> revised in R2-133718

R2-133718 Draft reply LS to S2-133846 = R2-133066 on GCSE with eMBMS (to: SA2; cc: -; contact: Qualcomm) Qualcomm Incorporated LSout
=> revised in R2-133724

R2-133724 Draft reply LS to S2-133846 = R2-133066 on GCSE with eMBMS (to: SA2; cc: -; contact: Qualcomm) Qualcomm Incorporated LSout
=> Change 3c: "When pre-established eMBMS bearer is used, the waiting for MCCH modification period is avoided. RAN2 discussed ways to reduce the delay based on existing mechanisms." To "RAN2 has discussed that pre-established eMBMS bearers can be used to avoid the waiting time. RAN2 also discussed that traffic could be carried on PTP (unicast) connections while an eMBMS bearer is being setup. Finally, RAN2 discussed ways to reduce the MBMS bearer establishment delay based on existing mechanisms. These aspects will be discussed further in coming RAN2 meetings."
=> Change to "The RAN contribution to the end to end delay is on average 100ms depending"
✓ => With these changes the LS on "GCSE with eMBMS" to SA2 is agreed in R2-133728

Other

R2-133521 Skeleton TR for Group Communication for LTE; Alcatel-Lucent; TR; 36.8xx;
- Huawei would like to add a section for possible enhancements. ALU clarifies that the primary purpose is to evaluate the existing mechanisms. ALU thinks that the section 7 could list shortcomings and possible solution directions. But this is not the focus of this study item. NSN agrees. Huawei thinks that the SID also suggests to evaluate new solutions. Samsung also thinks that we should focus on existing mechanisms. DT agrees.

=> We will use an 36.8xx number (internal to 3GPP): 36.868
=> TR Skeleton is agreed in R2-133710 TR 36.868 v0.1.0 (MCC)
=> CB: [GC] An updated TR capturing agreements from this meeting can be provided in R2-133711 v0.1.1 (ALU)

✉ **[LTE/GC] One week email discussion [83bis#04] to capture the agreements of this meeting in the TR 36.868 (ALU)**

R2-133281 Group scheduling for GCSE; Huawei, HiSilicon; Disc;
not treated

Late or withdrawn

R2-133143 Analysis on radio transmission mechanisms for Multicast Delivery; ZTE; Disc;
withdrawn

R2-133280 GCSE requirements fulfilment for Unicast and eMBMS; Huawei, HiSilicon; Disc;
[Late]
withdrawn, see R2-133395 and R2-133396 instead;

R2-133397 GCSE requirements fulfilment for eMBMS; Huawei, HiSilicon; Disc;
withdrawn, see R2-133396 instead;

7.7 SI: Smart Congestion Mitigation in E-UTRAN

(FS_SCM_LTE, leading WG: RAN2, REL-12, started: Sep 13, target: Mar 14, WID: RP-131397)

TR Structure

R2-133353 Skeleton TR proposal for Study on Smart Congestion Mitigation in E-UTRAN; LG Electronics; TR; 36.8xx;
=> Agreed as baseline TR 36.848 v0.1.0 available in R2-133704

=> CB: [SCM] An updated draft TR 36.848 v0.1.1 capturing the agreements from this meeting can be provided in R2-13705 (LG)

R2-133705 TR update for Study on Smart Congestion Mitigation in E-UTRAN; LG Electronics; TR 36.848 v0.1.1
=> Change "However, in the current standard behaviour, MMTEL call shall be barred whenever ACB is activated" to "However, in the current standard behaviour, MMTEL call may be barred whenever ACB is activated"
- ALU wonders what the requirement on CSFB is.
=> Remove "and CSFB"
=> With these changes the TR update is agreed in R2-133717 v0.2.0 (no revision marks)

Proposed Work-Plan

R2-133634 Proposed work plan and way forward for SCM; LG Electronics, NTT DOCOMO, NEC; Disc [Late]
- NSN wonders whether a solution specified particularly for VoLTE could interfere later with a solution such as ACDC, application specific admission control. Now we seem to do something for one particular application. BlackBerry agrees with NSN. DCM thinks that in this Study Item we should find out what functionality is currently missing. We can use that as input to further SA1 discussions. Ericsson agrees with DCM that there is no problem to discuss this issue. QC also thinks we should focus on the main problems and try to find feasible solutions.

Key Issues, Available Solutions and Proposed Enhancements

What are the problems observed in the field? How can existing solutions be applied? What functionality is lacking? What enhancements could be considered? How does that map to work ongoing e.g. in SA1?

R2-133354 SCM Key Issue: Prioritization of Mobile Originating Voice Services in E-UTRAN; LG Electronics Inc., SK Telecom, KT Corp., LG Uplus; Disc;
- DT wonders what the problem and difference is compared to other access technologies. LG thinks that for UMTS there is a possibility to prioritize conversational voice based on the establishment cause. DCM thinks that in UMTS we have DSAC which allows prioritizing CS domain. DT wonders what a possible solution would be. Is the intention to block other services? DCM thinks that as first step, VoLTE calls should not be barred. Ericsson agrees that in LTE it happens that VoLTE calls are barred by SSAC and then secondly by regular ACB. NSN thinks that such solutions would have an impact and interfere with existing access barring. Therefore, NSN does not want to take the ACDC discussion here.
- NSN wonders whether the intention is now to prioritize Voice services? Earlier it has been to down-prioritize Voice services. DCM thinks that it depends on the deployment. Different scenarios may require barring different things. NSN is concerned that we try to prioritize a different traffic type in each and every release. QC finds it natural that we add functionality as the requirements change.
- CMCC would support considering this as a key issue. QC supports this as well.
=> The inability of LTE to prioritize VoLTE calls over other data in access barring and/or connection establishment, leads to establishment failure of VoLTE calls and is therefore considered as key issue in this SI.
=> Noted

R2-133407 Smart congestion mitigation in LTE; Ericsson; Disc;
- Huawei thinks we should ask CT1 whether it is possible to consider higher layer solutions without RAN2 impact as well as ask whether NAS can distinguish voice calls to tell AS layer. Ericsson thinks the problem today is in AS layer which is barring the access. QC agrees with Ericsson that the issue is on AS layer.
- NSN agrees with Huawei that a new call type would need to be defined by CT1 and also that information would be required from the NAS layer. DCM thinks that the solutions would have more or less impact on CT1 specifications. DCM thinks we should anyway study here which one would be feasible from our point of view and then ask CT1 whether that would be feasible for them.

- NSN wonders how the QCI solution would work. Ericsson explains that the eNB would indicate in SIB which QCIs are allowed to be transmitted.
- For scenario 3 NSN wonders whether we would need to ask SA1 whether we can re-define the meaning of SSAC.
- LG thinks that we certainly should ask for other WGs opinions once we have identified which solutions seem feasible from RAN2 point of view. Huawei wants to send an LS as soon as possible.

=> Noted

✉ **[LTE/SCM] email discussion [83bis#13] to discuss solution candidates for prioritizing VoLTE (LG)**
- May discuss IDLE and CONNECTED

- Intel and NSN think we should first focus on the most important issue. We can discuss later whether also the emergency call is an issue. BlackBerry thinks we could still discuss the other case in the next meeting.

R2-133356 SCM Key Issue: Prioritization of emergency/high priority access in RRC_CONNECTED; LG Electronics Inc.; Disc;
R2-133282 Analysis of the requirements for Smart Congestion Mitigation; Huawei, HiSilicon; Disc;
R2-133104 Discussion on how to prioritize high priority access over the other accesses in RRC_CONNECTED; ITRI; Disc;
R2-133163 SCM: What is a sensible scope/solution direction for Rel-12 ?; Samsung; Disc;
R2-133195 The scope of smart congestion mitigation; NSN, Nokia Corporation; Disc;
R2-133258 Scope for smart congestion mitigation; MediaTek Inc.; Disc;
R2-133283 PMOC scenarios; Huawei, HiSilicon; Disc;
R2-133284 Possible solutions for congestion mitigation in RRC_CONNECTED; Huawei, HiSilicon; Disc;
R2-133357 SCM Solutions for Prioritization of Mobile Originating Voice Services in E-UTRAN; LG Electronics Inc., SK Telecom, LG Uplus; Disc;
R2-133497 Use cases and key issues for Smart Congestion Mitigation work; NTT DOCOMO, INC.; Disc;
R2-133404 Prioritisation of mobile originating access during congestion; BlackBerry UK Limited; Disc;
R2-133466 Proposed way forward for SCM for LTE in RAN2; NEC; Disc;
All 12 Tdocs above not treated

Late or withdrawn
R2-133408 Smart congestion mitigation in LTE; Ericsson; Disc;
withdrawn, see R2-133407 instead;

7.8 WI: TDD Interference Management and Traffic Adaptation (eIMTA)

(LTE_TDD_eIMTA-Core, leading WG: RAN1, REL-12, started: Dec 12, target: Dec 13, WID: RP-121772)

R2-133056 LS on LTE_TDD_eIMTA (R1-134019; contact: CATT); RAN1; LSin; to: RAN2;
[Moved from 3.2 to 7.8]
=> Noted

General
R2-133220 Impact of TDD eIMTA on RAN2; CATT; Disc;
- NSN wonders whether DL subframes can be used for UL transmission (case 3). Samsung thinks that the main case is that a subframe is indicated in SIB1 as UL but can be used dynamically for DL. CATT agrees that Case 1 and 2 are the main focus.

Proposal 1:
- MediaTek and Nokia think that all IDLE UEs should follow the configuration in SIB1. QC agrees.
- Ericsson and Samsung think that the NW should probably avoid using dynamic subframes for scheduling Message 3 and 4.

Proposal 5:

- NSN wonders whether usage of eIMTA will be UE or cell specific. CATT thinks that it can be configured per UE. Ericsson agrees. Samsung thinks that it is in principle cell specific for all eIMTA capable UEs. Chairman wonders what the benefit would be not to configure an eIMTA capable UE with eIMTA if the cell is using eIMTA. Ericsson thinks that the NW needs to configure this by dedicated signalling. MediaTek thinks that the UEs need to be configured with an eIMTA group and therefore it has to be dedicated signalling. LG wonders whether there are multiple eIMTA groups. QC explains that it is related to CoMP where there could be multiple virtual cells with different UL/DL configurations. Huawei agrees and thinks that we just need to configure it dedicated per UE. LG thinks that so far they would only see a need for dedicated signalling if we need the group thing. But that seems to be pretty open in RAN1. MediaTek thinks that also DL HARQ patterns need to be provided by dedicated signalling.

Proposal 7:

- ZTE thinks that this would only be required if a lot of paging is to be expected. But since the feature is only for small cells, the special subframe does not need to be used for paging when it is intended to be used as Dynamic DL subframe by means of eIMTA.

=> Noted

Agreements

0 We will look at Case 1 and 2 only, i.e., a subframe is indicated in SIB1 as UL but can be used dynamically for DL.

1 Legacy and eIMTA UEs which are IDLE follow the TDD configuration in SIB1.

2 Legacy UEs CONNECTED UEs follow the TDD configuration in SIB1 (PCell)

FFS whether eIMTA can be supported on SCells (not yet agreed in RAN1 either)

3 TTI bundling and TDD eIMTA should not be configured simultaneously for a UE (but some UEs in a cell may be configured with TTI bundling while others are configured with eIMTA).

4 The network should know whether a UE supports TDD eIMTA

5 The network may configure an eIMTA capable UE with eIMTA by means of dedicated signalling. That means, the UE would only follow the eIMTA indication on PDCCH if it has been configured with eIMTA via RRC beforehand.

5a As the feature is only for Connect mode any configuration will be provided by means of dedicated signalling (not in SIB).

FFS what needs to be configured as part of the dedicated configuration (e.g. group RNTI, HARQ timing; power control parameters…).

6 RRM/RLM follows legacy behaviour and subframes. (as indicated by RAN1)

FFS whether the special subframe is not used for paging when it is intended to be used as Dynamic DL subframe by means of eIMTA in that cell. That means, only ns1 and ns2 are applicable.

FFS: No new timing scheme for Message 1, 2, 3, and 4 is introduced.

FFS: For all UEs, PRACH resources (Msg1, Msg3) are not allocated/configured in subframes that can be dynamically configured as DL subframe (NW restriction)

FFS: If a period SR/SRS/CSI occasion coincides with a dynamic DL subframe, the UE omits the UL transmission.

R2-133386 eIMTA Impact on RAN2; Huawei, HiSilicon; Disc;
=> Noted

R2-133246 RAN2 impact of supporting eIMTA; MediaTek Inc.; Disc;
R2-133428 Discussion on RAN2 issues in TDD eIMTA systems; Samsung; Disc;
R2-133533 RAN2 Aspects of eIMTA; Qualcomm Incorporated; Disc;
R2-133238 RAN2 Aspects for Support of eIMTA; InterDigital Communications; Disc;
All 4 Tdocs not treated

DRX

R2-133387 DRX Issues for eIMTA; Huawei, HiSilicon; Disc;
R2-133366 RAN2 impacts of eIMTA; Ericsson; Disc;
R2-133222 DRX operation for TDD eIMTA; CATT; Disc;
R2-133251 DRX operation in TDD eIMTA; MediaTek Inc.; Disc;
R2-133274 Potential RAN2 impacts with eIMTA; LG Electronics Inc.; Disc;
R2-133528 DRX operation to support eIMTA; Intel Corporation; Disc;

All 6 Tdocs not treated

PHR

R2-133391 PHR considerations on TDD eIMTA; Huawei, HiSilicon; Disc;
R2-133248 Power headroom reporting in TDD eIMTA; MediaTek Inc.; Disc;
Both not treated

Other

R2-133221 Combination of CA and TDD eIMTA; CATT; Disc;
R2-133388 SPS Issues for eIMTA; Huawei, HiSilicon; Disc;
Both not treated

7.9 Other LTE Rel-12 WIs/SIs

Input to any other Rel-12 WI/SI not explicitly listed above. Note that TEI12 should be submitted in 7.10.

No contributions.

7.10 LTE TEI12

Small Technical Enhancements affecting LTE Rel-12 that do not belong to any Rel-12 WI.
Note: A TEI proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

7.10.1 LTE TEI12 CP and joint CP/UP

Time Broadcast

R2-133140 Addition of Time Uncertainty Information in SIB16; Qualcomm Incorporated, Samsung; CR; 36.331; C; REL-12; TEI12, LTE-L23;

- NSN thinks that it is not clear what the UE is going to do with the time information. It seems not justified to try to determine the uncertainty. Huawei agrees that it is unclear how this information benefits the UE. QC explains that if it is accurate it can be used as input to GPS and allows to get a faster fix. If not, it could be used to adjust the clock of the UE.
- QC thinks that it is not mandatory for the NW to provide it.
- QC thinks that in earlier discussions it was questioned how it could be used without accuracy information.
- Huawei thinks that a UE anyway needs to be implemented assuming that there is not such parameter since networks may not provide it.
- ALU wonders whether the UE would never use it for GPS assistance if accuracy indicates that it is not accurate. QC thinks it should then not use it for that purpose.
- Ericsson thinks that the UE gets the time without accuracy information, it could first assume that it was very accurate. If it does not find GPS fix quickly, it can widen the search window. Would that really be worse than assuming immediately a wider search window if accuracy information indicates that it is inaccurate.
- Ericsson thinks it is more burden for the NW than gain potential for the UE.

=> Unclear what the benefit of the uncertainty information would be and whether it justifies the extra complexity on the NW side.

- Ericsson supports the second change.

=> A CR covering only the second change (timeInfoUTC) is in principle agreed in R2-133715 (Cat. F; title: “Clarification to timeInfoUTC field in SIB16”)

RRC/ASN.1

R2-133369 How to extend field descriptions and conditional presence tables?; Ericsson; Disc; REL-12; TEI12, LTE-L23;

- Samsung wonders why there is a special need for conditions to do release tracking. We don’t do it for procedural text either. Ericsson thinks we could do it for that as well.
- NSN thinks we generally do not want multiple possible behaviours
- ALU thinks that previously we used version tagging of IEs in the conditions to clarify that certain conditions apply only for certain releases.
- Samsung thinks that in ASN.1 it is and needs to be clear what was introduced in which release. But Samsung does not think it is required for other parts of the specifications.

- Ericsson thinks it would not need to be limited to conditions but could also apply to field descriptions.
- Chairman thinks that this would help the network designers since they could just look at the latest release and would see immediately the (main) differences to the previous versions. Ericsson thinks it would only need to be done for essential changes. Samsung does not think we should really do that in our specifications. Tracking CRs should be sufficient.
- NSN thinks that usually we do not do non-backward compatible changes. Ericsson thinks this would be helpful for the NW side.
- ALU thinks that this could not be done for all changes. But it could be good for essential changes. But that would require a clear description of what an essential difference is. Chairman thinks that this could bear the risk that we don't tag all changes that could actually be essential at least for some NW implementations.

=> Noted

Access Barring

R2-133276 Access Class Barring for VoLTE; Qualcomm Incorporated; Disc; REL-12; TEI12, LTE-L23;
=> Noted

R2-133279 Access Class Barring for VoLTE; Qualcomm Incorporated; CR; 36.331; C; REL-12; TEI12, LTE-L23;
- NSN thinks that we should not discuss this at all now given it is one of the proposals in the SCM SI. QC does not think it is too early. QC think it does not need to be part of that SI. NSN thinks that SSAC was used to block Voice and Video while allowing other traffic. The absence of SSAC indicator cannot be interpreted as allowing Voice and Video even if access is barred by ACB. Samsung agrees with NSN that this is premature given that it could be one potential outcome of the SI. Huawei agrees. LG agrees that we should first progress the SI and see what the outcome is. It may then be so that we can agree this or a similar CR as TEI12. But we might also agree to start a WI and progress a different solution.

=> Postponed

eMBMS

R2-133592 eMBMS on SCell; AT&T; Disc; REL-12; TEI12, MBMS_LTE , LTE_CA-Core;
withdrawn

7.10.2 LTE TEI12 UP

The documents in this AI will be treated in the UP session. See Annex G.

R2-133267 Discussion on general gap handling; Samsung; Disc; REL-12; TEI12, LTE-L23;
R2-133268 Introducing general gap handling in the MAC specification; Samsung; CR; 36.321; F; REL-12; TEI12, LTE-L23;
R2-133394 Correction about FMS in PDCP; Huawei, HiSilicon; CR; 36.323; F; REL-12; TEI12, LTE-L23; [Late]
R2-133343 An optimization in logical channel prioritization; Renesas Mobile Europe Ltd.; Disc; REL-12; TEI12, LTE-L23;

8 UTRA Release 10 and earlier releases

NOTE: In AI 8 the references to "Chair" refer to Diana Pani (RAN2 vice-chair, Interdigital).

New REL-independent TS with the intention to replace TS 25.317:

R2-133118 Introduction of TS 25.3xx for release independent dual-band and multi-carrier configurations
NSN, Qualcomm Incorporated Disc REL-10 DB_DC_HSDPA-Core
motivation paper; note: The introducation of TR 25.317 was motivated by REL-10 WI DB_DC_HSDPA-Core that introduded additional dual carrier configurations in REL-10 that had to be introduced from REL-9 onwards already. In addition REL-11 WI

4C_HSDPA_Config-Core triggered new 4C configurations in REL-11 that should be applicable already from REL-10 (note: This was forgotten so far!).
- Blackberry: from a development point of view we would prefer to have one big spec including 25.307, 25.317.
- ALU: we prefer to keep it completely separate because we are introducing band combinations that we agreed to not include in 25.307 that contains legacy R99 things.

=> We agree that we will introduce a new spec 25.327
=> Noted

Reminder from MCC: If a new band or band/carrier combination is introduced in REL-x but it should be already applied from REL-y (y<x), then this must be explicitly requested in the WID, e.g. "This WI has to be introduced in a REL-independent way from REL-y onwards beginning with REL-y.". Otherwise there is no justification to do this.

The following 3 Tdocs indicate how the REL-9/REL-10/REL11 TS versions of the new TS will look like. But they need to be introduced as a REL-9 TS version and corresponding later REL-10/REL-11 CRs relative to v9.0.0.

R2-133119 Draft Rel-9 TS 25.3xx NSN, Qualcomm Incorporated Disc 25.3xx
=> revised in R2-133593

R2-133593 Draft Rel-9 TS 25.3xx on HSPA requirements on UEs supporting a release-independent frequency band and multi-carrier configuration NSN, Qualcomm Incorporated Disc 25.327
- ALU: Is it acceptable that 25.317 will become obsolete starting from Rel-9? NSN: Yes
- ALU: Why is section 5 and 6 Void? NSN: It's a placeholder for Rel-10 and Rel-11. This was a preference from the RAN2 secretary. ALU: why don't we include those combinations already in the spec as this is release independent? NSN because in Rel-9 we don't have a notion of 8C etc. Broadcom thinks that this is ok.
- Ericsson: Why do we remove the RRM requirement section. NSN: Because it does not refer to anything specific to dual band. Ericsson: by removing the RRM it is making it even more confusing.
- Ericsson: What about the signalling requirement? NSN: We had the same discussion in 25.317. For this case we do not need to support any RRC signalling extension and doesn't need to be included. Qualcomm: If you add new combinations would you need to add any spare values. NSN: We currently have 255 values (index) and the signalling already exists. ALU, Ericsson and Qualcomm have a preference to mention it.

=> We will put back the RRM requirement section.
=> We will put a short description on the signalling requirements. NSN to check offline what to add.
=>The document is revised in R2-133660

R2-133660 Draft Rel-9 TS 25.3xx on HSPA requirements on UEs supporting a release-independent frequency band and multi-carrier configuration NSN, Qualcomm Incorporated Disc 25.327
- Broadcom: What about the RRM requirement. We agreed to add it
- NSN: we are not sure what to write. Broadcom: we should mention that there are some RRM requirement that the UE should meet. Qualcomm: we also indicated that we don't really need it. RAN4 confirmed that there are not RRM requirement.
- Broadcom: the font of the signalling requirement is not correct.
- ALU: section 5.2 on frequency bands is a general section that includes all single-band/dual-band configuration. Perhaps we can consider making it more specific. NSN: maybe we don't need to be too specific. Ericsson: we generally refer to a section and not a table.

=> The content of the document is agreeable and NSN has to check offline with Broadcom about RRM requirement for next meeting and what to capture.
=> Noted

R2-133120 Draft Rel-10 TS 25.3xx NSN, Qualcomm Incorporated Disc 25.3xx
=> revised in R2-133594

R2-133594 Draft Rel-10 TS 25.3xx on HSPA requirements on UEs supporting a release-independent frequency band and multi-carrier configuration NSN, Qualcomm Incorporated Disc 25.327
- NSN: There is preference from the RAN2 secretary to include a placeholder for the non-adjacent configuration? Broadcom: we should do it when it is time. ALU: Where would it be? Broadcom and ALU have a preference not to have a placeholder.
- ALU: we should change section 5.1 to explicitly state adjacent.

=> We will add adjacent to section 5.1 title

=> RRM and signalling requirements will be added
=> Revised in R2-133661

R2-133661 Draft Rel-10 TS 25.3xx on HSPA requirements on UEs supporting a release-independent frequency band and multi-carrier configuration NSN, Qualcomm Incorporated Disc 25.327
- ALU: be more explicit in section 5.1.1.2 to say no additional requirement from later releases. NSN: we will change it

=> The content is agreeable
=> Noted

R2-133121 Draft Rel-11 TS 25.3xx NSN, Qualcomm Incorporated Disc 25.3xx
=> revised in R2-133595

R2-133595 Draft Rel-11 TS 25.3xx on HSPA requirements on UEs supporting a release-independent frequency band and multi-carrier configuration NSN, Qualcomm Incorporated Disc 25.327
- Broadcom: why are we adding a new placeholder? NSN: RAN2 secretary had a preference to be forward compatible.
- ZTE: Do we need a placeholder for multicarrier or multiflow configuration (non-contiguous). NSN: For dual band you have section 4. Multiflow is part of 4C.
- ALU: Reference 3 should be voided? NSN: I will check it.

=> The content is agreeable
=> Noted

REL-6 TEI6:

R2-133093 UE configuration after the interrupted reconfiguration process NSN Disc REL-6TEI6
- NSN: Question how to set the RSI flag in the case when a RLC unrecoverable error occurs while using an old configuration? Qualcomm: Is it really necessary for the network to know whether the UE is in old or new configuration? Ericsson: the network would like to know by means of the RSI flag. Qualcomm: when the UE is reconfiguring the variable Ordered configuration is set to TRUE and sets the RSI to TRUE. Broadcom: Not in CELL_DCH. Ericsson: it is used for different use cases.
- Ericsson: We have not finalized internal discussions for the two use cases, UE is configured into CELL_PCH/URA_PCH and the other case on call re-establishment.
- Ericsson: Maybe we need to think of DRX in CELL_FACH. Broadcom: We shouldn't have a problem with DRX in CELL_FACH.
- Huawei: It would be useful for the network to know what configuration the UE is using. Qualcomm: But what will the network do with that information. Ericsson: it uses the information to construct the CELL UPDATE CONFIRM. Broadcom: we agree with Ericsson.
- Huawei: Are we saying that the meaning of the RSI is different use cases. Ericsson: It is not clear in some places how to set the flag.
- ALU: we should prioritize the use cases where there is inconsistencies. NSN: There are a few scenarios, RLC unrecoverable error cases and RLF in the DCH-DCH case in old configuration and CELL_FACH to CELL_DCH in the new configuration.
- Blackberry: According to 8.1.3 the RSI flag is not set in the case of "before transmission of the response message to RRC reconfiguration message". We should double check the assumption. NSN: the text may need to be updated.

=> Noted

R2-133409 Way forward on RLF during reconfiguration Ericsson Disc REL-11 TEI11
=> Noted

R2-133094 Clarification for the UE configuration after the interrupted reconfiguration process NSN CR 25.331 F REL-11 TEI11
=> Not treated

Discussion based on R2-133093 and R2-133409:
=> Uses cases to discuss for next meeting (What is the intended behaviour and whether there is a need to change anything in the spec for each use case?)
- How to set the RSI flag in the case when a RLC unrecoverable error occurs while using an old configuration for the state transition case.
- DCH to DCH case: in the case of RLF in the old configuration
- FACH -> DCH case: In case of RLF occurring on the new configuration

- RSI settings based on the signalled CELL UPDATE cause value (i.e. separate the mobility and re-establishment use case (e.g. other than RLF and RLC unrecoverable error))

REL-7 WI RANimp-EnhState:

R2-133293 Consideration on activation/deactivation of enhanced CELL_FACH Huawei, HiSilicon Disc REL-9TEI9, RANimp-EnhState
- ALU: This would have been very nice several releases ago. However, at this point we do not see a need for it as we anyways have to do the work around to react to different UE behaviours.
- Ericsson: We are not interested in solving this use case
- NSN: We cannot state that such situation doesn't exist, it can happen. However, there is no use case for a very dynamic activation/deactivation but it can happen that it is activated.
- Broadcom: There can be slow activation but there are ways to handle it (for example shut down the cell).
- Huawei: there is some ambiguity in the spec. Ericsson: we can live with the UE ambiguity.
- Ericsson: we don't see the need for a dynamic activation.
- Chair: We will not work on any optimizations and Huawei can work offline to see if there is any support to resolve the ambiguity in case of slow activation.

=> We agree that we do not need to do any optimization for dynamic (or frequent activation/deactivation)
=> Noted

R2-133294 Clarification of enhanced CELL_FACH activation & deactivation Huawei, HiSilicon CR 25.331 F REL-9TEI9, RANimp-EnhState
cat.A CRs?
=> Not treated

R2-133095 URA_PCH relocation from R99 Cell_FACH to enhanced Cell_FACH NSN Disc REL-7 RANimp-EnhState, RANimp-UplinkEnhState
- Broadcom: This is a rare case no need to optimize. NSN: We have seen uses cases where cells have different supports. Broadcom: There is no issues.
- ALU: Looking at the solutions we are ending up with a complicated solution for a very minor use case. Ericsson: we also don't see a very big use case

=> RAN2 doesn't see a need to optimize this use case
=> Noted

R2-133096 Clarification for the SRNC relocation procedure in the URA_PCH state with the enhanced FACH enabled in the target cell NSN CR 25.331 F REL-11 RANimp-EnhState, RANimp-UplinkEnhState, TEI11- Chair: is this a category F? Aren't we introducing a functional change?
=> Not treated

REL-7 WI RANimp-CPC:

R2-133078 Stage 2 Alignment of (de)activating Order for HS-SCCH-less Operation ZTE CR 25.308 F REL-8RANimp-CPC, RANimp-DCHSDPA
cat.A CRs?
- ALU: Didn't we agree not to have this correction last meeting?
- Ericsson: Is this really an alignment or are you also introducing it in the RAN1 specs? ZTE: This is already in the RAN1 specifications. Our RAN1 specs are not introduced for this case they are for the multi flow feature.
- Ericsson: we don't see the need for a clarification. The clarification should be made in the context of dual cell as a CPC UE may not necessarily supports dual cell.
- ALU: the intention of the CR is correct. Huawei: has some sympathy since it is technically correct. BlackBerry: we support the CR.
- Huawei: what is the rule for stage 2 changes? ALU: we should try to change stage 2 in case the content in stage 2 is technically incorrect and misleading. In the cases where something is clear in stage 3 and is just missing there is no need.

=> The CR is postponed

R2-133079 Modification of (de)activating Order for HS-SCCH-less operation due to MF-HSDPA ZTE CR 25.308 C REL-11 RANimp-CPC, HSDPA_MFTX-Core
- Ericsson: We discussed this in multiflow and we decided to keep it as in legacy.
- Chair: No support from RAN2

=> The CR is not Agreed

REL-8 LTE-L23:

R2-133201 Removal of redundant conditions to E-UTRA frequency and priority info list Intel Corporation CR 25.331 F REL-8LTE-L23

cat.A CRs?
- ALU: Is this really necessary for Rel-8?
- Ericsson: the CR is changing the way the information is stored. We don't see a reason to change this. The if statement only becomes redundant for the first entry, but not for subsequent. Broadcom: we agree with Ericsson.
- NSN: Is there a problem to keep it? It seems like it is also changing internal UE behaviour.

=> The CR is not agreed

REL-8 WI RANimp-UplinkEnhState:

R2-133308 Clarification of downlink control PDU reception at common E-DCH activation & deactivation Huawei, HiSilicon Disc REL-9RANimp-UplinkEnhState, TEI9
- ALU: Is this an optimization (e.g. there is nothing broken)? Huawei: Yes
- Qualcomm: The logic makes sense. We have some concerns from an implementation perspective. This may results in confusion in the UE and in different behaviours depending on the timing.
- Huawei: What is the UE behaviour? Broadcom: The UE will initiate a CELL UPDATE, it will have to send a RLC ACK.
- Broadcom: There may be a risk of crossover. In case of crossover, it is clear in the spec that the UE will ignore the reconfiguration message.
- Chair: No support for the optimization

=> Noted

R2-133305 Downlink data reception on common E-DCH activation &deactivation Huawei, HiSilicon CR 25.331 F REL-9RANimp-UplinkEnhState, TEI9

=> Not treated

REL-9 WI RANimp-DC_HSUPA

R2-133098 Clarification to measurement configuration in Dual Cell E-DCH operationIntel Corporation Disc REL-9RANimp-DC_HSUPA
- Huawei: According to current spec the network is allowed to configure and the UE can report the measurement for both carrier. Read SFN indicator should be possible to be reported
- Broadcom: We never agreed to have this, we only agreed to have measurements on secondary carrier for events 1A, 1B, 1C. We have never discussed this. Huawei: If the CFN-SFN timing is critical for soft handover, how does the network configure the active set measurements?
- Qualcomm: So the use case we have a problem for is when we have different non-serving cells in the active sets?
- Ericssons: Are we discussing whether they can be configured or reported? The network can in theory trigger these measurements for the secondary frequency. Erisson: does the signalling allow the UE to report the CFN-SFN in event 1A. Intel: not with the event 1A report. Ericsson: Then we won't have anything to report as we only send 1A, 1B, 1C.
- Intel: How can the network know how to set the timing of the new cell to be included?
- Ericsson: What are we trying to achieve - determine what's possible with the current spec or do we want to optimize and discuss something new.
- Broadcom: the CFN-SFN can be reported with additional measurements and these can only be configured without reporting criteria. For DC-HSUPA this never happens as we always have a reporting criteria.

- Chair: Things to discuss for CFN-SFN for next meeting:
  1. Confirm whether this can be configured or reported?

2. Whether the network needs to configure these types of measurements
3. Can we report these measurements in DC-HSUPA (possible to configure and report)

- Chair: Things to discuss Rx-Tx time difference for next meeting
  1. Whether the network needs to configure these types of measurements (currently this is not possible to configure for DC-HSUPA)
  - what are the motivations to have these types of measurements
  2. Whether it is needed/necessary that the UE can report these measurements (also not possible to report)

=> Noted

R2-133465 Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA Qualcomm Incorporated, Broadcom Corporation CR 25.331 C REL-9RANimp-DC_HSUPA

- Ericsson: Section 8.6.6.49 we indicated to continue inter-frequency measurement when the EDCH variable is set to TRUE. We understand that this should happen in two cases when the variable was previously FALSE and the other case when it was already TRUE but the UL frequency is changed. We think we should try to be clearer.

=> We agree to more explicitly capture this in the following way:

> 2> if the variable was previously set to FALSE; or
>
> 2> if the IE "Frequency info" included in the IE "Secondary E-DCH info common" is different from the previously stored frequency info:
>
> 3> continue inter-frequency measurement reporting on the downlink frequency associated with the new secondary uplink frequency. The UE shall not require compressed mode to perform the measurement, regardless of the activation status.

- Intel: previously stored refers to the "Frequency info" stored from the IE "Secondary E-DCH info common"? Yes.
- Huawei: We agreed that "when a hard handover with a change of frequency happens, the UE stops all intra-frequency measurements and retains the measurement configuration". Qualcomm: This is already in the spec and this is applicable to the primary serving.
- Huawei: Section 8.6.6.49, should we be consistent and add this sentence <regardless of the activation status of the carrier. after "The UE shall not require compressed mode to perform the measurement", Qualcomm: we had it but we removed, we didn't think it was necessary. We will add it.
- Huawei: In the last change, we are not consistent with the legacy wording "cells for measurement" (or all cells in CELL_INFO_LIST if "cells for measurement" is not present)". Qualcomm: we are debating whether "cell for measurement" is per measurement ID or for all measurements. Qualcomm thinks it should be per measurement ID and Broadcom is not convinced. ALU: would like to understand why some think it is for all measurements. Broadcom: it is signalled with the CELL_INFO_LIST which is common for all measurements, however we think it is strange and there is no point to not have it per measurement ID.
- Broadcom: If it is per measurement ID then the implication is that we shouldn't use "cell for measurement" as it may be different for different measurements, and therefore we should use CELL_INFO_LIST (the only thing is know for certain).
- Intel: in Section 8.6.7.3 We do not think we should store the "Frequency info" in the CELL_INFO_LIST. Broadcom: We removed it from ASN.1 but never removed from the tabular. So we store it and then we clear it.

=> For section 8.6.7.3 We will remove the text about storing Frequency Info and delete the legacy text on clearing the variable. The later text of UE behaviour is unspecified will remain in the following form " if the variable SECONDARY_CELL_E_DCH_TRANSMISSION is set to FALSE UE behaviour is unspecified"

- Qualcomm: did we also want to delete the IE "Frequency info" in the CELL_INFO_LIST. Broadcom: we don't want a parameter that we don't use. We are find with adding a note.

=> add the CELL_INFO_LIST in the CR and write that this IE is not used in this version of the spec

=> The CR is revised R2-133662

R2-133662 Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA Qualcomm Incorporated, Broadcom Corporation CR 25.331 C REL-9RANimp-DC_HSUPA
=> The CR is agreed in principle

R2-133467 Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA Qualcomm Incorporated, Broadcom Corporation CR 25.331 C REL-10 RANimp-DC_HSUPA
This is not a pure shadow to R2-133465
=> revised in R2-133598

R2-133598 Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA Qualcomm Incorporated, Broadcom Corporation CR 25.331 C REL-10 RANimp-DC_HSUPA
This is not a pure shadow to R2-133465
=> The CR is revised in R2-133663

R2-133663 Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA Qualcomm Incorporated, Broadcom Corporation CR 25.331 C REL-10 RANimp-DC_HSUPA
=> The CR is agreed in principle

R2-133668 Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA Qualcomm Incorporated, Broadcom Corporation CR 25.331 A REL-11 RANimp-DC_HSUPA
- Qualcomm: need to delete the last sentence on category A in other comments in the cover page

=> The category of the CR should be C
=> The CR is agreed in principle in R2-133685

REL-10 WI 4C_HSDPA-Core:

R2-133468 A few clarifications to 4C-HSDPA Qualcomm Incorporated Disc REL-10 4C_HSDPA-Core
- Huawei: We agree that the configuration should not be allowed. Broadcom agrees as well.
- Huawei: We do not think we need a CR as it is a common understanding. Broadcom: The UE won't even understand the signalling.
- Broadcom: What about the case when the UE supports 3/4C but is only configured with 2C. Can it use the Rel-8 IE? NSN: This shouldn't happen. The understanding was that when we configure multi carrier there should not be any gaps for the initial configuration. For the reconfiguration there can be gaps as it is a mechanism to de-configure a carrier.
- Chair: we will not have a CR but just capture it as an agreement.

=> A Rel-10/Rel-11 UE not supporting 3C/4C HSDPA does not need to act on the Rel-10 IE "Additional downlink secondary cell info list FDD". If the UE receives the configuration the UE behaviour is unspecified.
=> For a Rel-10/R-11 UE, the initial multi-carrier configuration should not contain any gaps.
- Huawei: We agree with Understanding 1: new S1 is de-activated and new S2 is activated, i.e. remember the previous activation/de-activation status associated the "actual" secondary serving HS-DSCH cells. Understanding 2 is too complicated. Ericsson: Why is understanding 2 to complicated. Huawei: Just in comparison with understanding 1.
- Qualcomm: The configuration change can include a frequency change on the secondary carrier.
- Ericsson: For understanding 1, the network also has to keep track of the status of the activation/deactivation. How complicated is this case? Huawei: This is not an issue. Ericsson: We don't know, we need to check a little bit more.

After come back:
- Ericsson also understands, understanding 1. Qualcomm: We don't think we need a CR. NSN: Maybe we need to think about having a CR. Huawei: We also think there is a need for a CR. NSN: will try to have an offline to see if we create a CR.

=> Agree that understanding 1 is the correct understanding, which is "new S1 is de-activated and new S2 is activated, i.e. remember the previous activation/de-activation status associated the "actual" secondary serving HS-DSCH cells"
=> Noted

9 UTRA Release 11

NOTE: In AI 9 the references to "Chair" refer to Diana Pani (RAN2 vice-chair, Interdigital).

9.1 WI: Further enhancements to CELL_FACH

(Cell_FACH_enh-Core, leading WG: RAN2, REL-11, started: March 11, closed: Dec. 12, WID: RP-111321)
WI was closed at RAN-58. Only corrections, if any, expected.

R2-133083 Stage 2 Clarification for DTCH Related R99 PRACH Fallback ZTE CR 25.319 F REL-11 Cell_FACH_enh-Core

- Qualcomm: We had a discussion on this scenario. We agreed that there is nothing to be specified. The text added in the CR is not correct.
- Qualcomm: the intended behaviour in our opinion is the following:
  1) if DCCH has higher priority than DTCH, and a fallback indication happens, the UE should fallback to R99 PRACH
  2) if DTCH has higher priority than DCCH, the UE does not fallback but back-off
  3) if equal priority, it is left to UE implementation
- ZTE: The stage two spec is not clear and it states that the UE should not fallback. Ericsson: We don't think we need to change the stage 2 specs. Qualcomm: agrees that the current statement in stage 2 is incorrect or can be interpreted incorrectly in case of mixed traffic.
- Chair: companies will work offline to agree on a way forward and how it can be clarified properly.

=> The CR is revised in R2-133675

R2-133675 Stage 2 Clarification for DTCH Related R99 PRACH Fallback ZTE CR 25.319 F REL-11 Cell_FACH_enh-Core

- Broadcom: we don't need to clarify the second part.
- NSN: with the second change we have to be careful. It is confusing now what happens in case of DCCH.

=> Companies are fine with first change with a wording modification " If the network indicates fallback and the UE has data to transmit only for logical channels for which fallback is not configured" and removal of the second comma.
=> the second change is not agreeable
=> The CR is revised in R2-133686

R2-133686 Stage 2 Clarification for DTCH Related R99 PRACH Fallback ZTE CR 25.319 F REL-11 Cell_FACH_enh-Core

=> need to delete the second comma and remove the impact analysis
=> with these changes the CR is agreed in principle in R2-133687

R2-133330 Clarification of HS-DPCCH feedabck time for Node B triggered HS-DPCCH transmission to 25.321 Huawei, Hisilicon, Qualcomm Incorporated CR 25.321 F REL-11 Cell_FACH_enh-Core

- Ericsson: We are fine with the principle. The text is a little unclear, the 'or' is confusing.
- Chair: The behaviour should be that the UE can trigger feedback before contention resolution completes in case of Node B triggered HS-DPCCH. Companies will work offline to come up with an acceptable wording.

=> Revised in R2-133669

R2-133669 Clarification of HS-DPCCH feedabck time for Node B triggered HS-DPCCH transmission to 25.321 Huawei, Hisilicon, Qualcomm Incorporated CR 25.321 F REL-11 Cell_FACH_enh-Core

- Qualcomm: It should be "after" the allowed start time rather than "at" the allowed start time
- Ericsson: The network box should be un-clicked
- NSN: NodeB should be spelled with a space. QC: This is the name of the feature. NSN: We changed it in other specs. Huawei: Checked and RAN1/RAN3 and 25.321 specs have NodeB. For consistency we should do "NodeB". Ericsson: for the 25.331 we were going to bring a rapporteur CR anyways, so we will do there.
- NSN: what does if configured mean? Huwaei: It was copied from legacy text.
- Chair: The if configured was added in Rel-8 to capture that HS-DPCCH feedback had to be configured for E-DCH.

=> Agree for consistency to use "NodeB" and revert the changes done to 25.306 and 25.331 that have "Node B triggered". For 25.331 this will be changed in a rapporteur CR with other changes.
=> remove the if configured and add it after the else statement
=> The CR is revised in R2-133682

R2-133682 Clarification of HS-DPCCH feedabck time for Node B triggered HS-DPCCH transmission to 25.321 Huawei, Hisilicon, Qualcomm Incorporated CR 25.321 F REL-11 Cell_FACH_enh-Core
=> The CR is agreed in principle

R2-133456 Correction to the implicit release timer start for standalone HS-DPCCH Alcatel-Lucent CR 25.308 F REL-11 Cell_FACH_enh-Core
- NSN: it should be allowed start time of the E-DCH transmission. This is the sentence we have used in other specs to refer to that moment.
- Qualcomm: We agree with the intention. In general stage 2 needs to be cleaned up.
=> Qualcomm volunteers to present one big CR with stage 2 clean-ups that will include the content of this CR
=> With this change the CR is agreed in principle in R2-133664

R2-133297 Adding EARFCN extension to the variable EUTRA_FREQUENCY_INFO_LIST_FACH Huawei, HiSilicon CR 25.331 F REL-11 Cell_FACH_enh-Core
remove TEI11 from WI code
- Qualcomm; Is this extension already signalled? Is there an ASN.1 impact. Broadcom: There is no impact. The signalling in ASN.1 was already added as part of the CELL_FACH feature. Huawei already checked and confirms the ASN.1 change.
- Ericsson: The network is not impacted by the CR. Huawei will update the cover sheet.
=> The CR is revised in R2-133665

R2-133665 Adding EARFCN extension to the variable EUTRA_FREQUENCY_INFO_LIST_FACH Huawei, HiSilicon CR 25.331 F REL-11 Cell_FACH_enh-Core
=> The CR is agreed in principle

9.2 WI: HSDPA Multiflow Data Transmission

(HSDPA_MFTX-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111375)
WI was closed at RAN-58. Only corrections, if any, expected.

R2-133097 Clarification for stopping the RLC Timer_Reordering timer NSN CR 25.331 F REL-11 HSDPA_MFTX-Core
- Ericsson there is no inter-operability issues. ALU: Agree, it's just a configuration issue.
=> In the title page Change Source to R2 and only check the ME box (not the network) and change the inter-operability to "there is no inter-operability issues"
=> With this changes the CR is in principle agreed in R2-133666

9.3 WI: Other Rel-11 WIs

i.e. for WIs for which RAN2 is not prime responsible WG.

9.3.1 Four Branch MIMO transmission for HSDPA

(4Tx_HSDPA-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111393)
WI was closed at RAN-58. Only corrections, if any, expected.

R2-133080 Proceedings on Some 4x4 MIMO Issues ZTE Disc REL-11 4Tx_HSDPA-Core
- Qualcomm is not sure whether this configuration is allowed. Ericsson thinks that this is allowed and is clearly specified in 25.212. Do we need to clarify? NSN also thinks that this correct but it is clear in 25.212 and even in 25.308 we state that we can configure MIMO per serving cell with no limitations.
=> We will not capture it explicitly in stage 2, but we agree that it is possible to have different configuration in different serving cells (e.g. 2x2 in one and 4x4 in the other)
- ALU: For Proposal 2 and 3 we think that TEI12 topics should be small and not impact other working groups. ZTE: we think that RAN4 is working on this topic so we would like to treat it.
- Qualcomm: We should go to the plenary if we want to treat these topics.
=> We will not work on these topics as part of TEI12. Additional work should be proposed in the plenary.

=> Noted

R2-133082 Stage 2 Clarification for Joint Configuration with 2x2 MIMO and 4x4 MIMO ZTE CR 25.308 F REL-11 4Tx_HSDPA-Core, RANimp-DCHSDPA, 4C_HSDPA-Core, TEI11
=> Not treated

R2-133081 Stage 2 Clarification for Joint Configuration with 2x2 MIMO and 4x4 MIMO ZTE CR 25.308 F REL-11 4Tx_HSDPA-Core, RANimp-DCHSDPA, 4C_HSDPA-Core, TEI11
withdrawn

9.3.2 MIMO with 64QAM for HSUPA

(MIMO_64QAM_HSUPA-Core, leading WG: RAN1, REL-11, started: Dec. 11, closed: Dec. 12, WID: RP-121794)
WI was closed at RAN-58. Only corrections, if any, expected.

No contributions.

9.3.3 UTRAN aspects of Single Radio Voice Call Continuity from UTRAN/GERAN to E-UTRAN/HSPA

(rSRVCC-RAN_UTRA-Core, leading WG: RAN3, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111334)
WI was closed at RAN-58. Only corrections, if any, expected.

R2-133314 Clarification on the SR-VCC and rSR-VCC procedure definition Huawei, HiSilicon CR 25.331 F REL-11 SAES-SRVCC, rSRVCC-RAN_UTRA-Core, TEI11

- NSN: According to stage 2 spec 23.216 in 6.4.3.3 this is not in line with in case of SR-VCC, the PS to PS handover required should not be sent to old SGSN and hence no PS handover signalling is initiated.
- Huawei: From a RAN point of view can we have a simultaneous CS and PS handover. Broadcom: Yes. NSN: we are not saying this is not possible but rather that the current wording can be confusing.
- NSN we may need some more discussion offline

After come back:

- NSN thinks that we cannot have a simultaneous CS to PS handover + PS to PS. Huawei doesn't think this is inline with what other companies think. NSN: This is specified in stage 2 in SA. ALU: what about the RAN3 aspects

=> The CR is postponed

9.3.4 Others

(HSPA_UL_TxDiv-CL-Core, leading WG: RAN1, REL-11, started: Dec.10, target: Dec.12, WID: RP-120367)
The Core part of this WI was closed at RAN-58. Only corrections, if any, expected.

No contributions.

(HSPA_UL_TxDiv-OL-Core, leading WG: RAN4, REL-11, started: Dec.10, closed: Dec. 12, WID: RP-120367)
WI was closed at RAN-58. Only corrections, if any, expected.

No contributions.

(8C_HSDPA-Core, leading WG: RAN1, REL-11, started: Dec.10, closed: Sep. 12, WID: RP-101419)
WI was closed at RAN-57. Only corrections, if any, expected.

No contributions.

(eMDT_UMTSLTE-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec.12, WID: RP-121204)

R2-133173 Clarification on UE Information procedure HTC CR 25.331 F REL-11 ANR_UTRAN-Core, MDT_UMTSLTE-Core, eMDT_UMTSLTE-Core, TEI11
note: ANR_UTRAN-Core was a REL-10 WI, MDT_UMTSLTE-Core was a REL-10 WI, eMDT_UMTSLTE-Core was REL-11 WI
- Ericsson: It is true that in LTE it is specified that you wait for the Layer 2 ACK, but in UMTS we only have this L2 ACK in only few cases. We don't think it is critical and it is a best effort service. HTC: we don't think it is critical but it nice to have
- Broadcom: from the UE implementation it is simple to keep what we have.
- Huawei: MDT information is important for the network so we have some sympathy for this CR.
- NSN: HTC has a point, but they are concerned that it would require too many changes.
- NSN: If we allow the UE to follow the behaviour, is there a problem? ALU, NSN: No problem would be observed, there is no test anyways.

=> If the UE follows the behaviour specified in this CR there will be no impact
=> Not Agreed

9.4 WI: TEI11

R2-133336 Lossless transition from CELL_FACH to CELL_DCH Ericsson Disc REL-11 TEI11
This Tdoc is not related to CELL_FACH enhancements under AI 9.1?
- Broadcom: HARQ is in the PHY and when there is a reconfiguration the HARQ processes are flushed, however the MAC is not flushed. We think it is clear that we do not do a reset (e.g. reset TSN)
- Huawei: from a network side we would like the UEs to have predictable behaviour and support the intention, however we haven't checked the CR.
- Ericsson: our understanding is that if the UE doesn't receive the reset it should behave like in 25.321 and we don't say what we do when we don't receive it.
- NSN: which release of UE did this? Starting from Rel-9 we had an explicit indicator that the UE has to obey. In pre-Rel-9 the UE behaviour is unspecified when the UE transitions.
- NSN: the intention of the CR was that it was not clear what the UE did in a state transition with the flag. Broadcom: The intention was that the UE should obey the MAC-ehs reset indicator that was not there before and there was no behaviour what the UE should do.
- Chair: is the problem occurring for the state transition case only? Check offline whether the CR we introduced that the UE has to read the MAC-ehs in case of state transitions addresses the problem seen by Ericsson.

=> It is understood that when the UE doesn't receive a MAC-ehs reset from higher layer after state transition, the UE shouldn't perform a MAC-ehs reset (e.g. flush the reordering queues, reset the TSN, etc) and continue MAC-ehs operation.

After comeback:
- Ericsson thinks we should clarify it the agreement when this actions are taken as a MAC-ehs reset may happen for other reason than state transition. Broadcom: A reset may occur internally in the MAC (e.g. Treset).
- Qualcomm: are we sure that with the Rel-9 wording this is true. NSN: In Rel-9 we stated that the UE obeys to the MAC-ehs reset when transition from CELL_FACH to CELL_DCH and in Rel-10 it obeys in both cases CELL_FACH to DCH and DCH_FACH.

=> It is confirmed that with the previously agreed Rel-9 CR that requires the UE to act on the MAC-ehs reset during a state transition, it is clear that the UE will perform a MAC-ehs reset when it receives the indicator, otherwise it will not reset the MAC-ehs.
=> Noted

R2-133337 Clarification on UE actions at seamless upswitch from Enhanced CELL_FACH to CELL_DCH Ericsson CR 25.321 F REL-11 TEI11
=> Not treated

R2-133364 Unsuccessful reselection to SIB11bis neighbour cell BlackBerry UK Ltd. Disc REL-11 TEI11
- ALU: Wouldn't the UE have received the SIB11 within the 12s requirement? RIM: The 12s is for idle and for FACH is 4s and in some cases it can take longer in cell edge. We cannot guarantee that it will acquire it.
- ALU: I found some aspects contradictory.

- Ericsson: we have not seen such an issue in the field for UEs. We are not sure about the severity or whether this is a problem. But we confirm that SIB11bis may be a problem. Maybe something to study a little bit more. It could help the UE to reselect without SIB11, however there are some interaction between SIB11 and SIB11bis.
- Ericsson: We should analyze this issue a little bit more.
- ZTE: we share the view that this can become a problem and can become more problematic with HetNet mobility NCL extension.
- NSN: Is this something that you have seen in the field? BlackBerry: we have seen it in the field. We see it more often as SIB11bis is used more often now. NSN: We would like to think a little bit more.
- Broadcom: Is the problem because it is not scheduled on time or because you fail to decode? BlackBerry: you fail to decode SIB11 since it is longer than SIB11bis. Ericsson: if the SIB is long, you will have more segments and if you miss one segment you'll have to start over again.

=> Noted

R2-133406 Event 6D and TTI switch Ericsson Disc REL-11 TEI11
- Huawei: I am not sure about the motivation. Do you think the UE will report to many. Ericsson: Yes.
- ALU: why is it generating too many reports? Ericsson: The UE will obey the reporting criteria but some implementations may trigger event 6D.
- Huawei: We think the network uses event 6D for other reasons than E-DCH reconfiguration cases.
- Qualcomm: We are ok in general with this idea, we need a little bit more time to think about it. We are not sure how often this will happen, as the UE has to be at max power for a long time. Even if the UE doesn't operate in high data rate it can still trigger event 6D. How does the UE judge when to transmit 6D. It shouldn't be linked to bit rate. We need to understand the use case.
- Ericsson: The main drive is that the current specification leaves room to UE implementation (e.g. how the UE determines it is at its max power). ALU: If that's the case the network can just turn it off. Ericsson: We want to be able to use it.
- Broadcom: do you see this often? Is it a real problem (e.g. does it happen in the field)?
- ALU: We think this is a minor inconvenience. Ericsson: depends how the networks use the event 6D.
- NSN: Is this just to optimize the number of messages? Ericsson: we want the UE to unambiguously trigger the SI at the right time. NSN: Now we are completely changing event 6D definition.
- NSN: If you had the UPH report that would have solved this issue?

=> Noted

R2-133411 Cleanup of wideband RSRQ measurement capability Ericsson CR 25.306 F REL-11 TEI11, LTE-L23

=> The CR is agreed in principle

R2-133413 Cleanup of wideband RSRQ measurement capability Ericsson CR 25.331 F REL-11 TEI11, LTE-L23

=> The CR is agreed in principle

R2-133123 Cleanup corrections to TS 25.304 Huawei, HiSilicon CR 25.304 F REL-11 TEI11
- Chair: Should this be category D? Huawei: Yes
- Ericsson: Since this is a rapporteur CR there should be only the rapporteur company (HiSilicon) and in brackets (rapporteur)

=> Change to category D, uncheck both UE and network boxes, and change company name to HiSilicon (rapporteur)

=> With these changes the CR is agreed in principle in R2-133670

R2-133124 Clarification on the IMS voice capability Huawei, HiSilicon CR 25.306 F REL-11 TEI11
- Chair: should the work item code be related to the work item code that introduced the IMS capability?
- NSN: We don't need the change since the GSMA profile it is already clear that it is CS over HSPA.
- Qualcomm: agree with NSN

=> Not Agreed

R2-133125 Clarification on the IMS voice capability Huawei, HiSilicon CR 25.331 F REL-11 TEI11
=> Not treated

10 UTRA Release 12

10.1 SI: Study on Further EUL Enhancements

NOTE: In AI 10.1 the references to "Chair" refer to Diana Pani (RAN2 vice-chair, Interdigital).

(FS_EDCH_enh, leading WG: RAN2, REL-12, started: Dec. 12, target: Dec. 13, SID: RP-130347)
Contributions should avoid discussing aspects that were agreed to be handled in RAN1 first.
TR 25.700 v.0.3.0 R2-132976

R2-133174 Email discussion report on TR updates Ericsson TP 25.700 result of email discussion [83#15] REL-12 FS_EDCH_enh
- Broadcom: For SIB3 value tag, idle mode you only consider cell reselection and transition and for connected mode we consider only re-entering service area, Why is it different? Ericsson: What is the behaviour in idle mode if the value tag hasn't changed? Broadcom: you don't re-read. Broadcom: We need to check.

=> The TP is agreed

R2-133667 Study on Further EUL Enhancements TR 25.700 v0.3.1 Ericsson (Rapporteur) TR 25.700 Rel-12 FS_EDCH_enh
- Chair: remove changes on changes
- Chair: The TR is agreeable

=> The TR is revised in R2-133676

R2-133676 Study on Further EUL Enhancements TR 25.700 v0.3.2 Ericsson (Rapporteur) TR 25.700 Rel-12 FS_EDCH_enh
=> The TR is agreed in R2-133677 v0.4.0

R2-133684 Study on Further EUL Enhancements TR 25.700 v0.4.1 Ericsson (Rapporteur) TR 25.700 Rel-12 FS_EDCH_enh
- ALU: section 5.1.2.2.4.1 it seems like PPAC only applies to scenario. We should repeat the sentence under scenario 1
- Broadcom: remove the yellow highlights
- NSN: 5.2.3.1.3.1 we remove Gzip from the title
- NSN: move the R11 CELL_FACH from 5.3.2.3 into the solution section
- Huawei: in section 5.3.3.1 we say that the filtered UPH can be transmitted even though TEBS is zero. Our proposal was for legacy UPH. Ericsson: all the triggers and criteria we discussed are linked to the new UPH.

=> remove the editor's note. In 5.3.3.1
=> in section 5.3.3.2 add the following sentence after the figure "In case the RNC takes the decision, the Node B may inform the RNC about the triggering criteria being met and the RNC responds with a "proceed" message. Change the text on network makes the decision to "either RNC or Node B".
=> Change " behavior" to " behaviour"
=> In 5.3.3.2 capture alternavitely as an editor's note
=> The TR will be discussed over email discussion

✉ **Email discussion n.1 [83bis#05]**
Rapporteur: Ericsson
Deadline: submission deadline one week after meeting RAN2#83bis
Purpose: Review a Technical Report 0.4.2 TP capturing the agreements and technical proposals from the meeting RAN2#83bis
Outcome: Agree TR 25.700 v0.5.0

10.1.1 Improvements to handling of dynamic traffic on EUL

Including output of [83#15][UMTS/FEUL] Capture agreements (Ericsson)

No contributions.

10.1.2 Improvements to Access Control

Companies are encouraged to focus the discussions on the actual solutions addressing the different scenarios agreed to be addressed.

Solutions for controlling UL access

R2-133176 Access control in connected mode Ericsson Disc

- Huawei: What is the actual usage of the timer? Ericsson: we have similar mechanisms in the MAC with persistence timer.
- Huawei: Do you intend to introduce this to idle mode as well, it can be more complicated to signal access information. Ericsson: it can include but the main target is connected mode.
- Huawei: I see you are adding a lot of things in the system information. Ericsson: We don't necessarily need to add everything listed in the SIB. It would depend on the solution.
- NSN: you mention that you control SRBs then you can also control DCCH, but your proposal mentions DTCH. Ericsson: We can easily extend the solution for DCCH. NSN: Is your proposal is it both? Ericsson: Yes.
- ALU: It is not clear how this works exactly. Ericsson: We have provided details.
- Chair: Maybe we can break down in two solutions and explain the solution and impacts 1) control per UE, 2) per traffic type
- Qualcomm: We are open to the benefits of these proposals and don't think it is very complicated. Question, did you look into using the logical channel priorities instead? Ericsson: you can't delay per logical channel. Qualcomm: Can we use the logical channel priority number instead of signalling a new access group priority. Ericsson: This can be an option.
- ALU: Do we have a flag to control UEs? Ericsson: we are not sure how many bits, it would depend on WI phase discussion and solution (it could just be one bit or more). ALU: We need to state that these mechanisms may be turned on/off by one bit in the network.
- NSN: The solutions are for CELL_FACH, CELL_PCH, not for all states
- NSN: What do you mean by traffic type? What about interactions with other mechanisms. Ericsson: we can define way of how the interaction works the DSAC and we can specify for which bearers it applies.
- NSN: What about the CELL_UPDATE blocking since we agreed that we need a solution for CELL UPDATE in CELL_PCH. Ericsson: we can also block CCCH with this mechanism.
- ALU: we are not sure about the motivation about DCCH.
- Ericsson: what level of details should we capture these solutions? ALU: Some of the things you described online were not in the document so ideally you would explain some of the aspects.

=> We will capture this solution targeted for DTCH In the TR we can say that the solution can be used for DCCH if needed.

=> Noted

Agreements:

For access control in non-DCH state for UL transmissions for we have x solutions:

- Solution 1: Access control mechanisms based per network configured UE priorities
- Solution 2: Access control mechanisms based per network configured radio bearer priorities(a radio bearer can be a SRB if needed or DRB)
- Solution 3: Access control mechanisms based on a combination of UE and radio bearer

R2-133126 Discussion on mechanisms on controlling uplink data transmission Huawei, HiSilicon Disc

- Qualcomm: the traffic type differentiation is another flavour of radio bearer differentiation (e.g. a group of bearers).
- Chair: Work offline with Ericsson to see if there is a need to explicitly define what a traffic type is or how to differentiate/configure bearer priorities.

=> Noted

CELL_DCH access control solutions (DSAC/PPAC)

R2-133223 Discussion on CELL_DCH access control solutions Huawei, HiSilicon, NSN TP 25.700
- Qualcomm: Why do we want to add PPAC in DCH as well? Why can't the network already control it. Huawei: It is lower priority that DSAC.
- Ericsson: We keep the section for DSAC and there we write that similar solution can apply to PPAC.
- ALU: UE thinks that it is barred for paging and it will ignore any paging if the network wants to page the UE. This is quite a severe case, so it should be considered with the same priority. Qualcomm: Does the barring apply to paging type 2? It is FFS depending on whether paging type2 is also barred. Broadcom has confirmed that it is applicable to both.
- NSN: do we need to ask anything to SA2? Ericsson: we will have to but we should capture the solutions first.

=> PPAC update in CELL_DCH is a valid use case to address
=> We will add to the technical report that the issue and solution for DSAC is also applicable to PPAC as well.
=> The TP is not agreed

Wait time discussions

R2-133127 Discussion on wait time mechanism in SCR message Huawei, HiSilicon TP 25.700
- ALU: with the extended wait time we can currently stop the timer if we receive a paging, unlike with current wait timer where we ignore the paging. Are we thinking that we will use the same concept for the new extended timer in this SI?
- Chair: we need to think whether we will add a similar behaviour or text in the TR for the new extended wait time.
- Qualcomm: we do not see a bit need at this point
- Ericsson: How is SCR related to congestion in the network? We do not think it needs to be controlled.
- NSN: we think there could be some potential benefits and would like to continue looking into this.
- Qualcomm: The multi-RAB scenario is only a small percentage (5%) of a UE life time.
- Ericsson: when you release the connection the UE can may be controlled with other mechanisms (e.g. DSAC in connected mode)

=> The TP is not agreed

R2-133443 Further considerations on domain specific retry mechanism BlackBerry UK Ltd. Disc
- Ericsson: We this out of the scope. Does it address a RAN overload situation? BlackBerry: Yes.
- Huawei: how does this compare to Chiba issue? BlackBerry: Chiba problem is different, it is not related to congestion.
- Huawei and Ericsson: How does the UE know whether the failure is due to congestion or to interference? BlackBerry: we would have to discuss how the UE detects congestion.
- Chair: there is currently no support in the use case and solution

=> Noted

10.1.3 UL data compression

Discuss solutions for UL data compressions and benefits and drawbacks of the solutions. Gains with respect to existing higher layer data compression mechanisms can be presented and discussed.

R2-133389 Further considerations on the UL data compression NSN Disc
=> Not treated

R2-133122 Remaining text proposal for UL data compression Qualcomm Incorporated TP 25.700 REL-12 FS_EDCH_enh
=> The document is revised in R2-133672

R2-133672 Remaining text proposal for UL data compression Qualcomm Incorporated TP 25.700 REL-12 FS_EDCH_enh

- Chair: can we try to agree on the aspects that are agreeable by Thursday? Other aspects can be treated in the next meeting.
- NSN: we are not sure what the assumptions are in the evaluation assumption. For example, GZIP can work in different modes that effects the compression efficiency.
- Qualcomm: we will provide assumptions but we don't have them at this meeting.
- Ericsson acknowledges the gains presented by Qualcomm. We can remove the gain sections or add an editor's note.

=> We will agree to remove the sections 5.2.3.2.1 and 5.2.3.2.2 on evaluation for this meeting. For the next meeting we agree that we will include the results shown in this TP together with the assumptions.
=> The structure of the text will remain the same once the results are included next meeting
=> The TP is agreed without sections 5.2.3.2.1 and 5.2.3.2.2

10.1.4 Improvements to EUL coverage

Discuss measurement and configuration aspects for fast TTI switching. For measurements, companies are encouraged to discuss and identify whether further enhancements to UPH measurements are needed, what changes and what the benefits/drawbacks/gains are for such enhancements. For configuration aspects companies are invited to discuss the issue of soft handover, who makes the TTI switching procedure and how the non-serving Node Bs are made aware of the change.

UPH measurement enhancements and triggers

R2-133130 Discussion on UPH measurement improvement Huawei, HiSilicon Disc

=> This document should be a TP
- Ericsson: In the email discussion we agreed that we would have a similar mechanism to measurement reporting. Proposal 2 and 3 already in TR.
- Ericsson: we think the UPH will have its own trigger. It is important to send it even if the TEBS is zero as it would limit the feature.
- NSN: What is a UPH report. Ericsson: It is in the TR, it is the UPH sent by the MAC protocol with a 18bit PDU using the same format as the SI.
- ZTE: if you trigger a legacy SI you send the normal UPH or a filtered/new UPH? Ericsson: It's a valid question, we can either say that you send the legacy UPH or we can say that once configured you send the new UPH. But you still need to indicate that a threshold is exceed somehow.
- ZTE: no one showed the exact gain of filtering or different averaging. Ericsson: This why it is beneficial to have it network configurable.

=> Agree that the UPH will be allowed to be transmitted even though the TEBS is zero
=> Agree it should be possible to distinguish between the legacy UPH and the new UPH report
=> The TP already captures L3 filtering, thresholds criteria. We will remove the FFS in yellow about triggering criteria.

=> We agree on the TP from Huawei with the following changes
-remove the first addition in the TP (on the threshold criteria)
-Rephrase the second addition to: "it should be possible to distinguish the UPH report from the legacy UPH" without the examples
=> With these changes the TP is agreed

TTI switching decision and SHO

R2-133390 Further considerations on the design options for the UL TTI switching NSN Disc

- Ericsson; we acknowledge that there are benefits to both and we propose to allow both behaviours.
- ALU: It is quite useful to describe this as we may have describe different behaviours. I thought it was a good comparison.
- Ericsson: we should separate the discussion between who makes the decision and the soft handover.
- Ericsson: would we capture it in the evaluation section. Qualcomm: we would need to update the wording.

=> We will add a short comparison/evaluation in the TR in section 5.3.4 based on input from this contribution and based on other solutions. Additional impacts may be identified for the different solutions.

=> Noted

R2-133132 Discussion on E-DCH TTI switching enhancements Huawei, HiSilicon Disc
- ALU: About alternative 2, does it not work only from 2ms to 10ms as we are changing the 2ms table. Ericsson: We understand the concern, but we can fix this issue with other ways similar to the E-TFCI mechanism. Huawei: for 10ms TTI the table doesn't allow.
- Ericsson: may be we can generalize the proposal by saying Layer 1 signalling
- Qualcomm: for Layer1 and layer 2 signalling, one concern is the reliability of the message, since the message needs to be decoded by all non-serving Node Bs. Ericsson: there are several ways of overcoming this issue, with boosting. Qualcomm: this is an option but we have to keep in mind that the UE is coverage limited and it may not have the power available.
- Qualcomm: we would need to study a bit more and more details to be added (e.g. when is the message sent). Ericsson: it will have to be send before the switch happens in the old configuration.
- NSN: this is linked to who makes the decision. We would not have a soft handover problem to discuss if RNC makes the decision. This solution wouldn't harm even the case where the RNC makes the decision.

=> Noted

R2-133117 Further Thoughts on 2ms EUL Coverage Extension ZTE Disc
=> Not treated

R2-133567 Optimizations for UL coverage extension Qualcomm Incorporated Disc
- Ericsson agrees that we should allow the option of allowing the Node B to make the decision or the RNC to make the decision using optimized UPH reporting
- NSN: we are not sure what this makes. Ericsson: even in the work item phase we can take into consideration the possibility of allowing both.
- Huawei: If we add the option of the RRC based UPH should we have a comparison?
- Chair: Companies are invited to bring papers on RRC based UPH reporting mechanism and pros/cons

=> Way forward: We will not recommend a particular option about who makes the decision

On proposal 2:
- NSN: by switching to R99 we mean both DL and UL? Qualcomm: Yes, but then we have to discuss whether it is just a one way switching mechanism. Qualcomm: We were just asking if the working group saw a benefit from allowing a fast E-DCH ⇔ R99
- ALU: it seems a bit complicated to pre-configure the UE will with all these information.
- NSN: are you are ok to have multiple pre-configuration, up to three, 2, 10, and R99.Ericsson: we can also do it without a pre-configuration.

=> Noted

Agreements:
Who makes the decision
- Capture in the TR explicitly that in addition to the Node B making the decision, the RNC can also make the decision and that it is feasible to have both solutions.

How to inform the non-serving Node Bs about the TTI switch when the Node B takes the decision:
- We will capture the two alternatives for when the Node B takes the decision:
  1) Alternative 1 - TTI switching indication is transferred to non serving Node Bs through the RNC
  2) Alternative 2- Layer 1 or Layer 2 indication from UE to serving and non-serving Node Bs.
- For alternative 1 and 2 we will capture the identified concerns. For alternative 2 we will capture the concern on the need for all Node Bs to reliably decode the layer 1/2 signalling.

Additional EUL coverage proposals
R2-133128 Discussion on enhancements on initial TTI selection Huawei, HiSilicon Disc
=> This is a TP document

- Ericsson: this is a Rel-12 WI and we have R11 FE-FACH. Would we still need this enhancement if we have FE-FACH. Huawei: It depends on the FE-FACH implementation feature. It is an alternative to R11 feature.
- NSN: How can we use FE-FACH. Ericsson: It is because the UE will explicitly request a specific TTI value and the network would know which TTI the UE is requested.
- ZTE: The idea doesn't bring much complexity so it could be helpful for some network.
- ALU: there is some merit with potentially doing this
- NSN we cannot be sure that all R11 UEs will support.
- Ericsson: can we include it in the CELL UPDATE message. Huawei: Not a problem with common E-DCH

=> Agree to capture this as a potential enhancements and capture the fact that R11 FE-FACH is an alternative to this solution

=> We agree with the TP with the following changes:
- Change the following sentence: "Both RSCP and Ec/No may be useful ~~are needed if the network needs~~ for admission control and initial TTI selection."
- add in 5.3.3.x identifying that the solution is applicable for the case when R11 FE-FACH concurrent 2 and 10ms TTI is not supported.

10.1.5 UL control channels overhead reduction

R2-133141 Discussion on RAN2 impacts on uplink control channel overhead reduction Huawei, HiSilicon Disc
=> Not treated

10.1.6 Enabling high user bitrates in a mixed-traffic scenario

Companies are invited to provide contributions only on the RAN2 aspects of lean carrier operation. Contributions should focus on describing RAN2 impacts, solutions, and benefits/drawbacks

R2-133135 Considerations on Lean Carrier operation Huawei, HiSilicon Disc
- Ericsson:RAN1 states one option is to have the active set and the other option is to not have it. Huawei: We haven't captured the fact that we could use the DC-HSUPA measurements. Ericsson: one of the aspects of lean carriers is that the UE doesn't listen to the DL, and we don't do the measurements.
- Chair: Does this mean that the UE doesn't take measurements? Ericsson: Yes when it is not transmitting
- Broadcom has a preference to explicitly clarify that we do not take measurements. Huawei also thinks it needs to be clarified

=> We need to clarify that we do not take measurements

Proposals 1-3
- Ericsson: we acknowledge the fact that in some scenarios we may have to perform inter-frequency handovers and there may be some impacts.
- Ericsson: these concerns will be captured in the conclusion.

=> Agree to capture the concerns on signalling impacts, latency, and reliability of lean carrier operations
=> Noted

R2-133175 Considerations on Deployment Scenarios for Clean Carriers Ericsson Disc
=> Noted

10.1.7 Low-complexity uplink load balancing solutions

Companies are encouraged to focus only on RAN2 specific issues/impacts related to RAN1 identified solutions. Ideally this would be in response to a RAN1 triggered request or LS.

R2-133138 Considerations on uplink load balancing Huawei, HiSilicon Disc
=> These are RAN1 related discussions
=> Not treated

10.1.8 Others

Given the short time frame to completion of the SI, contributions proposing new areas of study should focus on showing the existence of an issue, justifying the need to further study it and potential gains of proposed solutions.

No contributions.

10.2 WI: UMTS Mobility enhancements for Heterogeneous Networks

NOTE: In AI 10.2 the references to "Chair" refer to Nicola Puddle (Alcatel-Lucent).

(UTRA_hetnet_mob-Core, leading WG: RAN2 , Started: Sept. 13, June 13, WID: RP-131348)
The work should focus on the aspects or problems already studied as part of the "Study on UMTS Heterogeneous Networks".

10.2.1 Small cell discovery and identification

Contributions should focus on proximity detection (UE based, NW based, UE based NW assisted) and the relaxed inter-frequency measurements for UE in Non DCH state.

R2-133290 Further discussion on Inter-frequency small cell discovery Huawei, HiSilicon Disc

Proposal 1: It is proposed RAN2 to focus on CELL-DCH state when discussing the inter-frequency small cell discovery mechanism.

Proposal 2: It is propose that, to the issue of inter-frequency small discovery and identification, RAN2 should focus on the solution of UE detecting small cell with network assistance.

- Ericsson: for observation 2, why is the NW proximity detection expected to generate lots of signalling? Huawei: you need the UE to collect the data, eg. Inter-freq meas results
- ZTE: we support P1, re: observation 1 we think it may come at low cost (eg reuse CSG proximity).
- Ericsson/NSN: P1 we think we should also look at non-DCH.
- Huawei: we need to do something for DCH, can we agree this?

=> Noted

R2-133339 Small Cell Discovery and Identification in Heterogeneous Network Ericsson Disc
=> Noted

Discussion on R2-133290 & R2-133339 on DCH proximity mechanisms
=> Agree that we will down select purely UE based proximity detection mechanism for DCH state.

R2-133459 NW Based Solutions for small Cell Discovery with UE Assistance in HetNets Alcatel-Lucent Disc
=>Not Treated

R2-133180 Relaxed Inter-frequency Measurements in Heterogeneous Networks Ericsson Disc

- Huawei: what are relaxed inter-freq measurements, and what is UE behaviour. Ericsson: UE will do this in the long DRX cycle, meaning it will take more time to do the measurement, minimal impact on UE for battery consumption as background activity.
- NSN: we think we should involve RAN4.
- NSN: what is UE behaviour, relaxed meas on per frequency or per cell basis? Ericsson: per cell basis.
- NSN: what does long DRX mean? Ericsson: 2nd DRX in FACH, PCH and Idle DRX.
- Huawei: How can we ask RAN4 anything when it is background UE activity. Ericsson: we think further discussion is required in RAN2 before we involve RAN4.
- Blackberry: will small cells be on higher priority layer, already relaxed meas for lower priority. QC: we don't think we can force NW deployments.
- QC: we think should be per cell & per freq, no need to involve RAN4 yet.

=> Noted

R2-133403 Relaxed measurements for HetNet NSN Disc
- NSN: the difference in our paper is that we do per-freq and per UE, with an optional timer. Ericsson: when would NW trigger the measurements for UE to look for small cells. NSN: going from DCH state. Ericsson: further maybe required so that UE isn't meas all the time. QC: NW control should be per freq, we don't see value of doing this at transitions, but perhaps there are use cases.
- Interdigital: would be reasonable to look at the LS from RAN4 to LTE hetnet on relaxed meas. Perhaps in UMTS we can then consider this LS response issues for next meetings UMTS hetnet contributions.
- Blackberry: if we relax only inter-freq, consequence would be that it takes longer to reselect to than in case of intra-freq. NSN: we have simulation results, is shows different deployments and consequences.
- Chair: contributions on relaxed meas for next meeting should consider NW triggers, NW configuration (eg. Per UE, per cell etc).

=> Agreed that we do not need to consider relaxed meas in DCH state
=> Noted

10.2.2 UE speed based mobility

R2-133178 Mobility for UEs with high speed in Heterogeneous NetworkEricsson Disc
- NSN: P1, do you exclude other mechanisms? Ericsson: P1 is what can be done today, nothing else in needed for DCH.
- Qualcomm: if we don't have relaxed meas what are you proposing for P2. Ericsson: we are open to dicsuss.
- Huawei: you assume NW has an accurate estimation of UE speed? Ericsson: we consider there are reliable mechanisms to use in DCH state today.
- ZTE: we support P1, and share QC view on P2. WE need to justify gain of solution on top of P1.
- Blackberry: on P2, today there is the scaling factor for UE mobility. Chair: is the scaling factor set on per cell basis in NCL? QC: each cell broadcasts scaling, but doesn't allow to set different for different cells.

=> Noted

R2-133320 Discussions on the solutions to improve mobility performance for UE with high speed Huawei, HiSilicon Disc
- NSN: P1 is there any specification impact? We think it's possible with current NW implementation. Huawei: maybe it's helpfull for UE to not to report e1b by cell type.
- Ericsson: Agree with NSN, it is possible today, how do we indicate cell type? Huawei: we think just a small cell indication. Ericsson: what about power class of small cell.
- Qualcomm: we think the proposal is that UE doesn't report e1b. But we also think there are issues with doing this i.e keeping macro cell in AS.

=> Noted

R2-133402 Time To Trigger and Small Cell Power Class for Neighbour Cell List NSN Disc
- ZTE: for cell specific TTT, is this different for small cell and macro, and per power calls of small cell. NSN: it could be per cell
- Huawei: have NSN done simulations, in our paper there were issues with TTT, For P2 LPN power class do you mean dB. NSN: we will likely have simulation next meeting, different power class is also useful for UL imbalance issues.
- Qualcomm: P1 this was discussed in LTE (with simulation results) and LTE concluded that they don't see need for it. So we should have some simulation results for UMTS.
- Qualcomm: we have CPICH power is this not enough? NSN: is not necessarily linked to power of LPN.
- Ericsson: we think P2 should be treated in RAN1. P1 we think there is no optimisation required.
- Blackberry: P2 agree with QC & Ericsson.For P2 we think this is not needed.
- Chair: For next meeting, simulation results should be provide to show any gain in UMTS for TTT.

=> Noted

10.2.3 Mass small cell deployment

Contributions should focus on extending NCL

R2-133179 NCL Extension for Mass Small Cell Deployment in Heterogeneous Network Ericsson Disc
- Huawei: what is the reason for extending NCL to non-DCH UEs? NSN: we support extension in DCH, and think it would be good to do this also for SIB. Broadcom: also wonder om the motivation. Ericsson: focus should be on DCH, we would like UE to reselect to small cells as well. Huawei: we don't see strong motivation for small cell deployment for coverage, as the small cell would be in the non-extended 32 list. Ericsson: extension can also be for offloading.
- QC: for avoidance of interference issues should also reselect, we want to cover DCH and non-DCH. Broadcom: what about legacy UEs with only list of 32. QC: good point, it may not be needed if a way is found to handle legacy.
- Blackberry: what about battery consumption in non-DCH (idle XXX-PCH) if we extend the list. NSN: is this from SIB reading or measuring. Blackberry: both could be impacted, but more for measurement. Ericsson: we think it depends upon what RAN4 determine.
- Blackberry: SIB11bis can be used for overflow from SIB11, we should see how much this is used in NWs. Ericsson: SIB11b is for overflow, is irrespective for extension of NCL.

=> Noted

R2-133321 Further discussions on NCL extension for massive small deployment Huawei, HiSilicon Disc
- QC: do we really need the extension, if the existing NCL are properly managed. Ericsson: we think the NCL is reaching its limits already with just macro cells. NSN: we would like to extend the NCL. Blackberry & Broadcom: we agree with QC, there could be consequences on UE side.
- Ericsson: it is important we know the impact, so sending LS to RAN4 is needed.

=> Noted

R2-133319 [draft] LS on extending the size of the neighbour cell list Huawei LSout REL-12 UTRA_hetnet_mob-Core
- We should ask also about the non-DCH states, whether they have suggestion of feasible value if less than 64 is possible without performance impacts, what the performance impacts are of value 64 and cover inter and intra.

=> The draft LS is revised in R2-133671

R2-133671 [draft] LS on extending the size of the neighbour cell list Huawei LSout REL-12 UTRA_hetnet_mob-Core
- Qualcomm: change the & with "and"

=> With this change the LS is agreed in R2-133683

R2-133458 Mass Small Cell deployment, identifying small cell Alcatel-Lucent Disc

=> Not treated

10.2.4 Further mobility enhancements

R2-133116 Further Visions and Concerns on UMTS HetNet Mobility Enhancement ZTE Disc
- Chair: which issues should we further discuss in RAN2
- Ericsson/NSN: Issue 1, 3 & 5 should be further discussed in RAN2, not necessarily under the hetnet WI.
- Huawei: Issue 1,5 & 6.
- QC: Issue 1, 5 & 6 need further consideration
- Blackberry: we think issue 3 aswell.

=> Noted

R2-133224 Impacts on DF-DC operation in HetNet Huawei, HiSilicon, Qualcomm Incorporated Disc
Proposal 1: It is proposed to specify DF-DC operation in Rel-12 specifications
- Huawei: offline companies wondered whether we should address DF-DC in RAN2, the scope of WI covers 'Consider further mobility enhancements (e.g. intra-frequency event

triggered reporting on the secondary carrier)' so before we can do this we need to introduce DF-DC.
- NSN: we need to wait for RAN1 to decide to introduce DF-DC. Huawei: in RAN1 they have completed the study on DF-DC. NSN: we need to see what is in WI in RAN1, and that is the plenary whom decide.
- Qualcomm: RAN1 saw benefits/gains in RAN1, no further study is intended in RAN1, we can focus just on the mobility aspects.
- Chair: should we wait and see if RAN1 will introduce DF-DC, or treat the mobility aspects in RAN2.
- NSN: we think the mobility aspects can be used outside of DF-DC.
- Ericsson: what if RAN1 don't introduce DF-DC?

=> Agree that any RAN2 aspects (eg. Mobility) just for DF-DC should be postponed until after Dec plenary, awaiting any possible plenary decision to introduce it.

=> Noted

R2-133225 Considerations on further mobility enhancements in HetNet Huawei, HiSilicon Disc

=> Not treated

R2-133568 Signaling enhancements for mobility in multi-carrier multiflow Hetnet Qualcomm Incorporated Disc

=> Not treated

R2-133331 Consideration on further enhancements to enhanced serving cell change (eSCC) Huawei, HiSilicon Disc
- Qualcomm: have concern we are not addressing the real issues, how many failures are due to e1B/e1C? Huawei: will need to provide details later, but should be marginal percentage.
- Ericsson: also concern on actual failures, UL or DL? Which case is it e.g. macro-> small cell (visa versa). Huawei: failure for UE to receive ASU, DL failure.
- Chair: any support for this
- NSN: need more time to evaluate.
- Chair: this can be brought at next meeting, if there is more support

=> Noted

R2-133434 Enhanced URA_PCH state for the HetNet deployments NSN Disc
- Chair: Is there any concern with this proposal for enh PCH state?
- Qualcomm: which cases is the optimisation actually addressing. NSN: we can also apply to non-hetnet scenarios to reduce the CU messages.

=> Noted

10.2.5 Others

Note: In the agenda R2-133050 this was called AI 10.2.6 but this is now corrected to AI 10.2.5 which was missing.

R2-133317 Work plan for the WI of UMTS HetNet Mobility Huawei, HiSilicon Disc REL-12 UTRA_hetnet_mob-Core
- Broadcom: do we need a stage 2? This would be beneficial. Huawei: this is a good idea and also for other rel-12 WIs.
- Chair: whats the feeling of companies on alignment of solutions with LTE hetnet WI. Huawei: we think this would be good to take their considerations into account when deciding on solutions, but not necessary to align. NSN: we can look at their decisions but not necessarily do the same thing. Ericsson: this should be good to consider, but not necessarily address the same in UMTS
- Ericsson: perhaps it would be unlikely to be able to agree stage 3 so early. Interaction with other groups this may mean we need to wait for other WG.

=> Noted

10.3 WI: BeiDou Navigation Satellite System (BDS) for UTRA

NOTE: In AI 10.3 the references to "Chair" refer to Diana Pani (RAN2 vice-chair, Interdigital).

(LCS_BDS-UTRA-Core, leading WG: RAN2, started: March 13, target: March 14, WID: RP-130416)
Including output of [83#14][UMTS/BDS] UMTS CR (ZTE)

R2-133148 Summary of Email discussion [83#14][UMTS/BDS] UMTS CR ZTE Report REL-12 LCS_BDS-UTRA-Core
result of email discussion [83#14]; related 25.331 CR in R2-133149
=> The document is revised in R2-133674

R2-133674 Summary of Email discussion [83#14][UMTS/BDS] UMTS CR ZTE Report REL-12 LCS_BDS-UTRA-Core
=> This should be a discussion document and not a CR
=> Noted

R2-133149 Introduction of BDS in UTRAN ZTE CR 25.331 B REL-12 LCS_BDS-UTRA-Core
result of email discussion [83#14]
=> The CR is revised in R2-133673

R2-133673 Introduction of BDS in UTRAN ZTE CR 25.331 B REL-12 LCS_BDS-UTRA-Core
- Intel: MaxIGPInfo currently set to 320 but in Rel-12 we only use 16 values. ZTE: The max number of IPG is 320. At this stage 16 is enough. Ericsson: We prefer to have it up to 320, it would cost us only 5bits at this point and if we were to do it later on the overhead of including a new list increases.
- We also recommend moving the " Ionospheric information for upto 16 grid points will be included in this version of the specification" to the tabular 10.3.7.92d as a description.

=> Keep the value to 320 and move the sentence to the tabular
=> With this changes the CR is in principle agreed in R2-133681

R2-133150 Introduction of BDS in UTRAN ZTE, CATR, CATT, Huawei, Intel Corporation CR 25.306 B REL-12 LCS_BDS-UTRA-Core
=> The CR is agreed in principle

10.4 SI: Enhancements to SIB

NOTE: In AI 10.4 the references to "Chair" refer to Diana Pani (RAN2 vice-chair, Interdigital).

(FS_UTRA_SIBenh, leading WG: RAN2, started: Sept. 13, target: Dec. 13, WID: RP-131386)
Contributions should focus on identifying the need for additional broadcast capacity and not on solutions.

R2-133414 Workplan for Study on Enhanced Broadcast of System Information Ericsson Disc
- Huawei: In what cases we need RAN1? Ericsson: This is more for the event when we have a RAN1 question.
- NSN: can you please elaborate more about these items " i.e. the use of scheduling and concatenation". Ericsson: this is a description of the legacy BCH mechanism and how it works now with scheduling and concatenation.
- ZTE: the BCH load in Rel-12 is very uncertain given that the Rel-12 features are not completed. Ericsson: we will have to deal with these aspects in the SI.

=> The Work plan is agreed
=> Noted

R2-133417 TR Skeleton for Study on Enhanced Broadcast of System Information, v0.0.1 Ericsson TR 25.704 REL-12 FS_UTRA_SIBenh
=> revised in R2-133590

R2-133590 TR 25.704 Skeleton for Study on Enhanced Broadcast of System Information, v0.0.2 Ericsson TR25.704 REL-12 FS_UTRA_SIBenh
- NSN: perhaps load can be replaced by capacity or a better word. It is a bit confusing especially for section 5.

=> change the title in Section 5 to mechanisms to handle System Information capacity
=> With this change we agree with the TR v 0.1.0 in R2-133679

R2-133323 Analysis of BCH capacity Huawei, HiSilicon Disc

- ALU: What happens if SIB12 is not broadcasted then we can use SIB11, there are other ways to save capacity, by not broadcasting SIB12. Qualcomm: SIB12 is used to differentiate connected mode and idle mode so you may need to send both.
- Ericsson: Section 2.1 we have a different numbers, it would be nice to have ways to compare between companies and have more details on the configuration assumed. Huawei: We are taking the maximum requirement into account.
- Ericsson: we think that the 92 is high and the load depends on the configuration. Huawei: we just want to say that for Rel-11 there is no problem
- Ericsson: if we want to compare we would like to know more details on how the conclusion was reached.
- Chair: in the study item we will identify different realistic configurations and provide more details on the deployment configuration used for the analysis.

=> Noted

R2-133415 The need for additional broadcast capacity Ericsson Disc

- ALU: in the appendix we have considered different settings, however we think we should also consider different cell types, like Home NBs for example have another SIB. Ericsson: The load on the CSG cell is small as we won't have many of the features, and most of the issues would occur in normal network deployments. But we should keep it in mind where we should differentiate.
- ALU: Rel-12 is completely unknown but what can be useful could be a linear progression of the increase in previous releases. Ericsson: we can have a what if analysis, for example what if we were to introduce a NCL list. Ericsson: We can do both a prediction based on previous release and a what if. Qualcomm: Given the limited time we don't think it would add too much. ALU: the purpose of the study is to show that there is a problem.
- ALU: Table in section 4.2 the conclusions on the load for each scenario is a bit suprizing. Ericsson: the load would depend on how network configuration is done.
- BlackBerry: Can we have some real deployment scenarios? Ericsson: up to release 11 we can try to do what we think are possible deployment scenarios.

=> Noted

R2-133418 Text Proposal for Study on Enhanced Broadcast of System Information Ericsson TP 25.704 REL-12 FS_UTRA_SIBenh

- ALU: we are not convinced we need the paragraph on LTE, the mechanisms are quite different. Ericsson: we wanted to make a comparison we with LTE. Huawei: agrees with ALU.

=> We will remove the paragraph on LTE

- ALU: Why does concatenation reduce capacity? NSN: concatenation allows to optimize. Ericsson: we think the comment is correct
- ALU: do we want to mention that concatenation can improve capacity?

=> We will revise section 4.2 to better capture the fact that concatenation is a tool to enable hte network to deal with capacity and describe some benefits.

- Huawei: 4.1 we state that the BCH capacity is not increased, which is misleading. If we increase the repetition period we can broadcast more SIBs.

=> We will not state that the SIB capacity is not increased

- Huawei: The second paragraph has too many details on the specific importance of SIBs, we would like to make it more general. Ericsson: We can re-write based on Huawei's feedback but what we wanted to say that the MIB and SIB take some capacity.
- Huawei: what's the intention of the last sentence of 4.1. The sentence doesn't belong in that section.

=> We will include the intention of this sentence in another section (e.g. a section related to the impacts of segmentation)

Discussion on section 5:

- ALU: re-acquisition depends on the need and whether the UE is in the same cell. We should be careful with the wording.

=> We will update the description to say "if" it needs to reacquire.

- Huawei: In some cases there is no problem as we can provide the SIB information in the RRC connection for example the CS fallback. Ericsson: we acknowledge that DMCR and SIB inclusion help.

=> We will re-write the use case to reduce the focus on the negative aspects and acknowledge that these features were introduced with the aim of reducing latency.
- Huawei: some use cases are not so severe in some cases where the UE implementation allows storing. Ericsson: how long the UE keeps or doesn't have to reaquire it is not very clear.
=> re-word to make clearer the fact that in some cases if the UE doesn't have to re-acquire the System information
- BlackBerry: there is another negative impact for cell reselection that the UE would go out of service. It may take longer to acquire the NCL in SIB11 and therefore a failure may occur. ALU: Is this already captured in the segmentation section? NSN: Is this related to your previous section. BlackBerry: yes but the problem is more general as the mobility may fail if you can't acquire the mobility information. NSN: we think that this a bit out of scope. Ericsson: this section was aimed that the increase of the repetition period results in capacity issues. NSN: Increase in capacity doesn't improve link efficiency.
- ALU: Where do we capture the basic sentence that we will not be able improve the identified impacts. The potential enhancements would only prevent making it wors
=> Capture this in a sentence at the beginning of section 5.
- ALU: Section 5.2- change roaming word to something related to mobility (moving)?
- Huawei: how is BCH capacity improvement going to improve battery consumption. Ericsson: This section is describing the impact of increased load on BCH. We did not capture how big the impact is. Ericsson: In some cases it may improve, for example if BCH1 and the new BCH are scheduled at the same then the network can broadcast more without impacts to power consumption. However we should avoid discussion on solutions. NSN: we are not sure what we will conclude based on this section. Power consumption is very UE implementation dependent.
- BlackBerry: the assessment that the impact for a stationary UE it is negligible.
=> If we ever have this section we will change the word to "relative low"
=> The section is removed.

Discussion on section 6 - what is expected for next meeting to progress the discussions:
- Ericsson: my proposal is to have an analysis on what they think would be the expected load:
  - Assess the Rel-11 with concrete scenarios
  - Assess the Rel-12 feature and what/how the assessment is done
- ALU: we should have a more complete write down of what configuration are used for the analysis so we can assess the deployment scenarios. Ericsson: agree, either a list of hte configuration of a hexadecimal string.
- Huawei: What we do for release 12? Ericsson: the extended neighbour cell list will result in the biggest impact on the SIBs.
=> Companies are invited for the next meeting to bring an assessment of the expected R11 and Rel-12. Companies should provide details on the assumed scenario they have analyzed. For Rel-12 details on the assumed Rel-12 features and their impacts should be provided.
=> Revised in R2-133680

R2-133680 Text Proposal for Study on Enhanced Broadcast of System Information Ericsson TP 25.704 REL-12 FS_UTRA_SIBenh

=> Section 6 needs to be removed
=> The TP will be discussed over email

✉ **Email discussion n.2 [83bis#15]**
Rapporteur: Ericsson
Deadline: submission deadline for the RAN2#84 meeting
Purpose: Review a TP capturing the agreements reached during RAN2#83bis
Outcome: Agreeable TP to TR 25.704 for RAN2 #84

10.5 Other UMTS Rel-12 WI/SIs

NOTE: In AI 10.5 the references to "Chair" refer to Diana Pani (RAN2 vice-chair, Interdigital).

Input to any other Rel-12 WI/SI not explicitly listed above. Note that TEI12 should be submitted in 10.6

10.5.1 WI: Further enhancements to H(e)NB mobility Part 3

(EHNB_enh3, leading WG: RAN3, REL-12, started: Sep.12, target: Dec 13, WID: RP-130741)

R2-133333 Introduction of inbound mobility to shared CSG/hybrid cell Huawei, HiSilicon, Alcatel-Lucent, NSN CR 25.367 B REL-12 EHNB_enh3-Core
=> Include document number in the document
=> With this change the CR is agreed in principle R2-133678

R2-133455 Allowing reselection to a member E-UTRA CSG in CELL_FACH when E-UTRA measurement for CELL_FACH is configured Alcatel-Lucent, Ericsson CR 25.304 B REL-12 EHNB_enh3-Core
- ALU: the CR introducing the feature was agreed in principle in R2-132143 and put on hold. We would combine these changes to that CR and present one CR when we formally agree.
- Huawei: we are concerned that this is breaking the FACH measurement feature. Ericsson: Even today this is broken as the UE is not network controlled for CSG cell reselection. Huawei: in the case it is broken the network doesn't have dedicated measurement control over the UE. But not the UE does.
- ALU: when we discussed this, it was the way most companies thought it should work (to allow the UE to autonomously reselect even in the case it is in network controlled measurements).
- NSN: you would have to deactivate one feature to allow the UE autonomous behaviour.
- Qualcomm: it is not obvious how it should work. ALU: We discussed this in previous meeting and agreed that this should be the behaviour.

=> The CR is agreed in principle

10.5.2 Other

No contributions.

10.6 UMTS TEI12

NOTE: In AI 10.6 the references to "Chair" refer to Diana Pani (RAN2 vice-chair, Interdigital).

Small Technical Enhancements affecting UMTS Rel-12 that do not belong to any Rel-12 WI.
Note: A TEI proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

R2-133084 Introduction of non-contiguous multi-cell with 4x4 MIMO ZTE CR 25.308 B REL-12 TEI12
=> withdrawn as not available

R2-133085 Introduction of non-contiguous multi-cell with 4x4 MIMO ZTE CR 25.306 B REL-12 TEI12
=> withdrawn as not available

R2-133086 Introduction of non-contiguous multi-cell with 4x4 MIMO ZTE CR 25.331 B REL-12 TEI12
=> withdrawn as not available

R2-133325 Cell reselection during uplink transmission with common E-DCH Huawei, HiSilicon Disc REL-12 TEI12, Cell_FACH_enh-Core
- ALU: how to we handle the fact that we are sending an indication from Node B and RNC and therefore impacting other groups. Additionally, do we need to notify RAN3? Huawei: We have two ways: we agree on a CR and then send an LS. The other option, RAN2 agrees and interested companies in RAN3 would do something if they think this is needed. ALU: we prefer the first alternative.
- NSN: if this feature requires this indicator it may impact how it is done in RAN3

- NSN: is this indicator absolutely necessary for this feature to efficiently work or can we leave without it? Huawei: It up to the network how to handle the UE indicator, either the Node B can make the decision and release the common E-DCH or the Node B can tell the RNC and the RNC can take the decision and act. It can be a useful information for the RNC. But if RAN3 can't do it, then we still think the feature is useful.
- Ericsson and ALU have a preference to have an indicator between Node B and RNC.
- NSN: if we have an indicator and the Node B supports and the drift RNC doesn't, what happens? ALU: nothing will happen, the IE will be ignored.
- Qualcomm: how often is the indicator sent if the network doesn't do anything

On the capability (agreed it is optional and it is FFS "Whether there will be a cell reselection indication capability (independent from the capability of Common RG based interference control) or there is no need for the network to know about the UE support."):
- NSN: No strong option The networks use the capability bit to understand the UE penetration
- Broadcom: can i use this feature if I only support Rel-8 Common-EDCH. Huawei: you don't need to support Rel-11, just common E-DCH.
- Ericsson: We think we need a capability bit reported from the UE to the network. It can also be used for the RNC can tell the Node B how to react to different UEs.
- Qualcomm: agrees with Ericsson. What happens if the Node B doesn't understand. Broadcom: it is the SIBs that enable it so the node B should understand it.
- Huawei thinks you don't need a capability as the Node B can indicate that the UE supports it. There can be a benefit for the RNC to know a bit in advance but we are not sure about the need.
- Ericsson doesn't think it is a big problem to indicate the capability in the RRC connection complete and allow the network to use it however it wants. ALU: there may be benefits to have this capability. However, if the RNC needs to tell the Node B there may further impacts to RAN3.

=> RAN2 agrees that it is preferable to the have a capability indication in the RRC connection complete message.

- Qualcomm: Does the feature applies for CCCH transmission. There is no explicit release so there is nothing the network can do anyways. CCCH data is small. We don't see a benefit for CCCH.

=> The feature does not apply to CCCH

On the interaction between RAN2 and RAN3:
- Broadcom thinks we should agree on the CR in RAN2 and send the LS to RAN3. Ericsson thinks these features are linked. If RAN3 cannot do it then we cannot do it. Huawei: We do not want to stop RAN2 work if RAN3 can't do it.

=> We will send an LS to RAN3 in the next meeting and do the RAN2 CRs in parallel
=> Noted

R2-133328 Introduction of Cell reselection indication during uplink transmission with common E-DCH to 25.321 Huawei, HiSilicon CR 25.321 B REL-12 TEI12, Cell_FACH_enh-Core
- Ericsson: it seems like the CR is proposing to release the Common E-DCH resource after triggering the SI. Are we challenging the agreement. Huawei: That was not the intention, we should delete these part of the sentence " once before Common E-DCH resource is released"
- Qualcomm: how does the interaction between the SI with the special LCH-ID value interact with the SI equal zero trigger work. What happens if they are both triggered? Do we send SI = 0 and release the resources like in legacy behaviour. Huawei: our understanding is that we will follow legacy behaviour. Qualcomm
- Qualcomm: Usually with the SI triggers we define what we do if the SI fails, do we retransmit? Huawei: We think that the same behaviour as the other SI failures should apply for CELL_FACH.
- Ericsson wonders how we will capture the UE capabilities that was left FFS in the previous meeting.

=> Postponed

R2-133329 Introduction of Cell reselection indication during uplink transmission with common E-DCH
Huawei, HiSilicon CR 25.331 B REL-12 TEI12, Cell_FACH_enh-Core
=> Not treated

11 Outgoing LSs and email discussions from UTRA session

11.1 Agreed outgoing LSs from UTRA session

R2-133683 LS on extending the size of the neighbour cell list RAN2 to:RAN4 LSout REL-12
UTRA_hetnet_mob-Core

11.2 Email discussions from UTRA

✉ **Email discussion n.1**
Rapporteur: Ericsson
Deadline: submission deadline one week after RAN2#83bis
Purpose: Review and agree on a Technical Report 0.4.2 TP capturing the agreements and technical proposals from the meeting RAN2#83bis
Outcome: Agree TR 0.4.2

✉ **Email discussion n.2**
Rapporteur: Ericsson
Deadline: submission deadline for the RAN2#84 meeting
Purpose: Review and agree on a TP capturing the agreements reached during RAN2#83bis
Outcome: TP to TR 25.704

12 Comebacks

This agenda item will be used during the meeting. No documents are supposed to be submitted by delegates.

12.1 LTE breakout session

R2-133645 Report from UP Session, VC (LG)
=> Agreed

✉ **[LTE/MAC] email discussion [83bis#14] on Msg3/TTI bundling (ZTE)**
- Check the current specification and implementation of the legacy UE behavior for collision case between UL grant of C-RNTI of new transmission and UL grant of Temporary C-RNTI of retransmission. If something is not clear, discuss the UE behavior for Rel-11.

In-principle agreed CRs from UP Session

R2-133226 Clarification on the HARQ feedback for SCell activation/deactivation command
MAC CE CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE
CR 36.321 F REL-10 LTE_CA-Core

R2-133227 Clarification on the HARQ feedback for SCell activation/deactivation command
MAC CE CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE
CR 36.321 A REL-11 LTE_CA-Core

12.2 UMTS breakout session

No contributions.

12.3 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.

No contributions.

12.4 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 will be provided to the email reflector after the meeting.

- ✉ [Joint/Wifi] One week to approve the LS to SA2 and CT1 (Intel) - The intention is to clarify the text (so that it becomes understandable from SA2/CT1 point of view) but not to add or remove questions. The final LS can be provided in R2-133697
- ✉ [Joint/WiFi] One week on TP for RAN and ANDSF based WLAN interworking (Orange) - final version can be provided in R2-133725
- ✉ [Joint/RACH] Chiba issue and aggressive RACH (Sony) - more detailed analysis of the problem (Chiba: Latency vs. UL power; Aggressive RACH: ???) and existing solutions
- ✉ [LTE/RRC] Conditional presence statements (Samsung) - To Discuss a draft CR until next meeting
- ✉ [LTE/SCE] Capture agreements from this meeting (DCM) - R2-133712 v0.3.1
- ✉ [LTE/SCE] Capture further evaluation and analysis in the TR (DCM)
- ✉ [LTE/D2D] One week: TP for TR 36.843 on D2D including RAN2 agreements (QC) - final version can be provided in R2-133699 - an LS to RAN1 can be provided in R2-133726
- ✉ [LTE/GC] One week to capture the agreements of this meeting in the TR (ALU)
- ✉ [LTE/SCM] Discuss solutions candidates for prioritizing VoLTE (LG) - May discuss IDLE and CONNECTED
- ✉ [LTE/MAC] Msg3/TTI bundling (ZTE) - Check the current specification and implementation of the legacy UE behavior for collision case between UL grant of C-RNTI of new transmission and UL grant of Temporary C-RNTI of retransmission. If something is not clear, discuss the UE behavior for Rel-11.

For a complete list of all email discussions see Annex F.

13 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 LSs

=> CB: A draft LS to RAN1 requesting provisioning of L1 parameters in our preferred format (Excel sheet) can be provided in R2-133709 (NSN)

R2-133709 Draft LS on L1 parameters for Rel-12 features; to RAN1; Contact: NSN; eIMTA, …

=> Attach Excel Sheet as in "ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_72/Docs/R2-106061.zip"

=> Remove "FS_MTCe_RAN,"

=> Change "well before the Rel-12 deadline" to "before RAN2-85bis"

=> List 85bis in the bottom of the LS

✓ => With this change the LS on "L1 parameters for Rel-12 features" to RAN1 is agreed in R2-133719

Agreed LSs

This section contains a list of approved outgoing LSs (press F9 to update while the cursor is inside the list).

- ✓ => The LS on "RRC parameter names with and without extension in L1 specs" to RAN1 is approved in R2-133626
- ✓ => With this change the LS on Mitigating excessive signalling to SA2 is approved in R2-133729
- ✓ => With this change the LS on "Corrections to Galileo Assistance Data Elements" to RAN3 and GERAN2 is approved in R2-133653
- ✓ => With these changes the LS to SA2/CT1/GERAN2 on "Provisioning of E-UTRA Radio Capabilities in GERAN" is approved in R2-133696

- ✓ => The LS on “Inter-RAT capability signalling for MFBI” to GERAN2 is approved in R2-133692
- ✓ => With these changes the LS on UEPCOP to SA2 is approved in R2-133695
- ✓ => With this change the LS on “Measurement result reporting” to RAN5 is approved in R2-133647
- ✓ => With these changes the LS on security aspects of protocol architectures for small cell enhancements to SA3 (CC RAN3, CT1, SA2) is approved in R2-133650
- ✓ => The LS on Public Safety UE-Network Relays; to SA2 is approved in R2-133720
- ✓ => With these changes the LS on “GCSE with eMBMS” to SA2 is approved in R2-133728
- ✓ => With this change the LS on “L1 parameters for Rel-12 features” to RAN1 is approved in R2-133719

For a complete list of agreed outgoing LSs see Annex D.

14 Any other business

Meeting schedule 2012/2013/2014/2015:

MEETING	DATES	LOCATION	HOST	CO-LOCATION
RAN2 #77	6 Feb – 10 Feb 2012	Dresden, Germany	EF3	RAN 1/2/3/4/5, SA5
RAN #55	28 Feb – 2 March 2012	Xiamen, China	ZTE, CMCC	
RAN2 #77bis	26 March – 30 March 2012	Jeju, Korea	Samsung	RAN 1/2/4
RAN2 #78	21 May – 25 May 2012	Prague, Czech Republik	EF3	RAN 1/2/3/4/5
workshop RAN #56	11 June – 12 June 2012 13 June – 15 June 2012	Ljubljana, Slovenia Ljubljana, Slovenia	EF3 EF3	
RAN2 #79	13 Aug. – 17 Aug. 2012	QingDao, China	Huawei	RAN 2/4/5 + 1/3
RAN #57	4 Sep. – 7 Sep. 2012	Chicago, USA	NAF3	
RAN2 #79bis	8 Oct. – 12 Oct. 2012	Bratislava, Slovakia	EF3	RAN2 only
RAN2 #80	12 Nov. – 16 Nov. 2012	New Orleans, USA	NAF3	RAN 1/2/3/4, @
RAN #58	4 Dec. – 7 Dec. 2012	Barcelona, Spain	EF3	
ASN.1 ad hoc for LTE	9 Jan. – 10 Jan. 2013	Bonn, Germany	Deutsche Telekom	
ASN.1 ad hoc for UMTS	10 Jan. – 11 Jan. 2013	Bonn, Germany	Deutsche Telekom	
RAN2 #81	28 Jan – 1 Feb 2013	St. Julian's, Malta	EF3	RAN 1/2/3/4/5
RAN #59	26 Feb – 1 March 2013	Vienna, Austria	EF3	
RAN2 #81bis	15 April – 19 April 2013	Chicago, USA	NAF3	RAN 1/2/3/4
RAN2 #82	20 May – 24 May 2013	Fukuoka, Japan	JF3	RAN 1/2/3/4/5, CT6
RAN #60	11 June – 14 June 2013	Oranjestad, Aruba	NAF3	
RAN2 #83	19 Aug. – 23 Aug. 2013	Barcelona, Spain	EF3	RAN 1/2/3/4
RAN #61	3 Sep. – 6 Sep. 2013	Porto, Portugal	EF3	
RAN2 #83bis	7 Oct. – 11 Oct. 2013	Ljubljana, Slovenia	EF3	RAN2 only
RAN2 #84	11 Nov. – 15 Nov. 2013	San Francisco, USA	NAF3	RAN 1/2/3/4/5, #
RAN #62	3 Dec. – 6 Dec. 2013	Busan, Korea	TTA	
RAN2 #85	10 Feb. – 14 Feb. 2014*	Prague, Czech Republic	EF3	RAN 1/2/3/4/5
RAN #63	3 March – 6 March 2014 **	Fukuoka, Japan	ARIB, TTC	
RAN2 #85bis	31 March – 4 April 2014	Valencia, Spain	EF3	RAN2 only
RAN2 #86	19 May – 23 May 2014	Seoul, Korea	LG Electronics	RAN 1/2/3/4/5
RAN #64	10 June – 13 June 2014	Sophia Antipolis, France	EF3	
RAN2 #87	18 Aug. – 22 Aug. 2014	Dresden, Germany	EF3	RAN 1/2/3/4/5
RAN #65	9 Sep. – 12 Sep. 2014	Edinburgh, Scotland	EF3	
RAN2 #87bis	6 Oct. – 10 Oct. 2014	tbd, China	Huawei	RAN2 only
RAN2 #88	17 Nov. – 21 Nov. 2014	tbd, USA	NAF3 (tbc)	RAN 1/2/3/4/5 etc.
RAN #66	9 Dec. – 12 Dec. 2014 **	tbd, USA	NAF3	
RAN2 #89	9 Feb. – 13 Feb. 2015	Europe	EF3	RAN 1/2/3/4/5
RAN #67	9 March – 12 March 2015 **	China		

MEETING	DATES	LOCATION	HOST	CO-LOCATION
RAN2 #89bis	20 April – 24 April 2015			RAN2 only
RAN2 #90	25 May – 29 May 2015			RAN 1/2/3/4/5, SA2
RAN #68	15 June – 18 June 2015 **	Europe	EF3	
RAN2 #91	24 Aug. – 28 Aug. 2015	China	Huawei	RAN 1/2/3/4/5
RAN #69	14 Sep. – 17 Sep. 2015 **	USA	NAF3	
RAN2 #91bis	5 Oct. – 9 Oct. 2015	Europe	EF3	RAN2 only
RAN2 #92	16 Nov. – 20 Nov. 2015			RAN 1/2/3/4/5
RAN #70	7 Dec. – 10 Dec. 2015 **	Sitges (tbc), Spain	EF3	

EF3: European Friends of 3GPP
NAF3: North American Friends of 3GPP
JF3: Japanese Friends of 3GPP

@: Also co-located: SA2, SA5, CT1/3/4/6
#: Also co-located: SA1, SA2, SA3, SA5, CT1/3/4/6
*: modified after TSG chairman's discussion at SA #57
**: 1 week TSG, starting on Monday

For plans for email discussions after RAN2 #83bis see Annex F.

15 Closing of the meeting

The TSG RAN WG2 chairman Henning Wiemann (Ericsson) thanked the delegates for participating and contributing to RAN WG2 meeting #83bis. He thanked the European Friends of 3GPP for hosting this meeting and closed the meeting on Friday October 11th, 2013 at about 16:30.

Annex A:
List of participants

The list of participants of this RAN WG2 meeting #83bis is attached to this report.

Total number of participants: 183 (registered before the meeting: 199)

Annex B:
List of Tdocs

The list of Tdocs of this RAN WG2 meeting #83bis is attached to this report.

Total number of Tdocs: 687 (R2-133050 - R2-133736) of which 16 Tdocs are not available, i.e. 671 Tdocs available.

Annex C:
Incoming liaison statements for TSG RAN WG2 #83bis

RAN2 Tdoc	title (contact)	source	original Tdoc	status	final LS answer	additional comments
R2-133053	Reply LS to R4-126987 = R2-130015 on wideband RSRQ measurement (contact: Ericsson)	GERAN	GP-130835	noted	no	
R2-133054	Reply LS to R2-130875 and R4-124948 = R2-124396 on extending E-UTRA band number and EARFCN numbering space (contact: Renesas)	GERAN2	GP-130844	noted	postponed	will wait for a RAN4 reply first
R2-133055	LS on RRC parameter names with and without extension in L1 specs (contact: Ericsson)	RAN1	R1-134009	noted	R2-133626	
R2-133056	LS on LTE_TDD_eIMTA (contact: CATT)	RAN1	R1-134019	noted	no	treated under AI 7.8
R2-133057	Reply LS to S2-133070 = R2-132280 on User Plane Congestion (contact: Cisco)	RAN3	R3-131600	noted	no	
R2-133058	Reply LS to S2-132325 on LAPI for NNSF (contact: Huawei)	RAN3	R3-131606	noted	no	NNSF = NAS Node Selection Function; LAPI = low access priority indication
R2-133059	Reply LS to C4-130835 = R2-132263 on High Priority mobile terminated calls (contact: Alcatel-Lucent)	RAN3	R3-131613	noted	no	
R2-133060	LS for PCell interruption for SCell activation (contact: CATT)	RAN4	R4-134552	noted	no	
R2-133061	LS on CoMP interference averaging (contact: Samsung)	RAN4	R4-134554	noted	no	

RAN2 Tdoc	title (contact)	source	original Tdoc	status	final LS answer	additional comments
R2-133062	LS on Agreements from TSG RAN on work on Public Safety related use cases in Release 12 (contact: Alcatel-Lucent)	RAN	RP-131405	noted	no	treated under AI 7.5
R2-133063	Reply LS to R2-133014 on Access control for UEs in RRC CONNECTED mode (contact: NTT DOCOMO)	SA2	S2-133550	noted	no	
R2-133064	LS on Public Safety UE-Network Relays (contact: Vodafone)	SA2	S2-133808	noted	R2-133720	treated under AI 7.5
R2-133065	Response LS to GP-130562 = R2-131561 on Provisioning of E-UTRA Radio Capabilities in GERAN (contact: Ericsson)	SA2	S2-133836	noted	R2-133696	treated under AI 4
R2-133066	LS on GCSE with eMBMS (contact: NSN)	SA2	S2-133846	noted	R2-133728	treated under AI 7.6
R2-133067	LS on Mitigating excessive signalling from frequent small data (contact: Ericsson)	SA2	S2-133860	noted	R2-133729	
R2-133068	Reply LS to R2-133034 on UEPCOP considerations (contact: Ericsson)	SA2	S2-133863	noted	R2-133695	treated under AI 5.2
R2-133069	LS on RAN1 input to Further EUL Enhancements TR (contact: Ericsson)	RAN1	R1-134027	noted	no	
R2-133070	Reply LS to R2-133018 on security aspects of protocol architectures for small cell enhancements (contact: NEC)	RAN3	R3-131919	noted	R2-133650	

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: 18 LSs received for RAN2 #83bis (1 on UTRA, 12 on LTE, 5 on joint aspects)
- 0 resubmissions from RAN2 #83
- 18 of the 18 incoming LSs were noted, 0 LSs not treated
- 1 of the 18 incoming LSs were received during the RAN2 #83bis meeting:
  - R2-133070 = R3-131919
- For 1 incoming LS an LS answer was postponed:
  - R2-133054 = GP-130844

Annex D:
Outgoing liaison statements of TSG RAN WG2 #83bis

Only final outgoing LSs are listed here.

final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-133626	RRC parameter names with and without extension in L1 specs from WG1	RAN1	-	Ericsson	R1-134009 = R2-133055	REL-11	LTE_CA-Core, LTE_eDL_MIMO-Core, TEI11	LS was sent out on Monday of RAN2 #83bis
R2-133647	Measurement result reporting in case of reportCGI measurement	RAN5	-	Qualcomm	-	REL-11	TEI11	
R2-133650	Security aspects of protocol architectures for small cell enhancements	SA3	RAN3, CT1, SA2	NEC	R3-133018 = R2-133070	REL-12	FS_LTE_SC_enh_hilayer	
R2-133653	Corrections to Galileo Assistance Data Elements	RAN3, GERAN2	-	Qualcomm	-	REL-12	LCS_LTE, LCS3-GNSS-UTRAN, TEI12	
R2-133683	Extending the size of the neighbour cell list	RAN4	-	Huawei	-	REL-12	UTRA_hetnet_mob-Core	
R2-133692	Inter-RAT capability signalling for MFBI	GERAN2	-	Huawei	-	REL-9	TEI9, LTE-RF	
R2-133695	UEPCOP considerations	SA2	CT1, CT4, GERAN	ZTE	S2-133863 = R2-133068	REL-12	MTCe-UEPCOP, FS_MTCe_RAN	UEPCOP = UE Power Consumptions Optimizations
R2-133696	Provisioning of E-UTRA Radio Capabilities in GERAN	SA2, GERAN2	-	Ericsson	S2-133836 = R2-133065, GP-130562 = R2-131561	REL-11	rSRVCC-GERAN	
R2-133697	CN impacts in RAN2 solutions for WLAN/3GPP radio interworking	SA2, CT1	RAN5	Intel	-	REL-12	FS_UTRA_LTE_WLAN_interw	result of email discussion [83bis#00]
R2-133719	Rel-12 L1 parameters	RAN1	-	NSN	-	REL-12	LTE_TDD_eIMTA-Core, Cov_Enh_LTE-Core, LC_MTC_LTE-Core, LTE_CA_TDD_FDD-Core, MBMS_LTE_OS-Core	
R2-133720	Public Safety UE-Network Relays	SA2, RAN1, RAN3	-	Vodafone	S2-133808 = R2-133064	REL-12	ProSe	ProSe = Proximity-based Services
R2-133726	Text proposal for RAN1 TR 36.843 on D2D including RAN2 agreements	RAN1	-	Qualcomm	-	REL-12	FS_LTE_D2D_Prox	result of email discussion [83bis#03]

final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-133728	GCSE with eMBMS	SA2	RAN1, RAN3, RAN4	Qualcomm	S2-133846 = R2-133066	REL-12	GCSE_LTE, FS_LTE_GC	
R2-133729	Mitigating excessive signalling from frequent small data	SA2	RAN3, CT4	Ericsson	S2-133860 = R2-133067	REL-12	MTCe-SDDTE, FS_MTCe_RAN	

Summary:

In total 14 outgoing LSs of RAN2 #83bis (2 of them agreed by email):
1 on UTRA, 7 on LTE/E-UTRA and 6 on joint aspects.

Annex E:
List of in principle agreed CRs of RAN2 #83bis

In total 45 in principle agreed CRs of RAN2 #83bis (including 4 which are implicitly in principle agreed, marked in yellow, since their cat.F CRs were in principle agreed) will be resubmitted to RAN2 #84 (incl. cat.A: 22 CRs for UTRA 25.xxx specs, 23 CRs for LTE 36.xxx specs, 0 CRs for joint 37.xxx specs).

The following table includes already Tdoc and CR numbers allocated for RAN2 #84 for all in principle agreed CRs of RAN2 #83bis:

RAN2 #84 Tdoc	Title	Source	Spec	CR #	rev	cat	Release	SI/WI	RAN2 #83bis Tdoc
R2-133766	Cleanup corrections to TS 25.304	HiSilicon (Rapporteur)	25.304	0361	-	D	REL-11	TEI11	R2-133670
R2-133767	Allowing reselection to a member E-UTRA CSG in CELL_FACH when E-UTRA measurement for CELL_ FACH is configured	Alcatel-Lucent, Ericsson	25.304	0362	-	B	REL-12	EHNB_enh3-Core	R2-133455
R2-133768	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	25.306	0438	-	F	REL-10	TEI10, LTE-RF	R2-133656
R2-133769	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	25.306	0439	-	A	REL-11	TEI10, LTE-RF	R2-133657
R2-133770	Cleanup of wideband RSRQ measurement capability	Ericsson	25.306	0440	-	F	REL-11	LTE-L23, TEI11	R2-133411
R2-133771	Introduction of BDS in UTRAN	ZTE, CATR, CATT, Huawei, Intel Corporation	25.306	0441	-	B	REL-12	LCS_BDS-UTRA-Core	R2-133150
R2-133772	Correction to the implicit release timer start for standalone HS-DPCCH	Alcatel-Lucent	25.308	0153	-	F	REL-11	Cell_FACH_enh-Core	R2-133664
R2-133773	Stage 2 Clarification for DTCH Related R99 PRACH Fallback	ZTE	25.319	0111	-	F	REL-11	Cell_FACH_enh-Core	R2-133687
R2-133774	Clarification of HS-DPCCH feedabck time for Node B triggered HS-DPCCH transmission to 25.321	Huawei, Hisilicon, Qualcomm Incorporated	25.321	0795	-	F	REL-11	Cell_FACH_enh-Core	R2-133682
R2-133775	Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA	Qualcomm Incorporated, Broadcom Corporation	25.331	5473	-	C	REL-9	RANimp-DC_HSUPA	R2-133662
R2-133776	Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA	Qualcomm Incorporated, Broadcom Corporation	25.331	5474	-	C	REL-10	RANimp-DC_HSUPA	R2-133663
R2-133777	Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA	Qualcomm Incorporated, Broadcom Corporation	25.331	5475	-	C	REL-11	RANimp-DC_HSUPA	R2-133685
R2-133778	Further corrections on MFBI related issues	Huawei, HiSilicon	25.331	5476	-	F	REL-10	TEI10, LTE-RF	R2-133693
R2-133779	Further corrections on MFBI related issues	Huawei, HiSilicon	25.331	5477	-	A	REL-11	TEI10, LTE-RF	R2-133694
R2-133780	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	25.331	5478	-	F	REL-10	TEI10, LTE-RF	R2-133654
R2-133781	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	25.331	5479	-	A	REL-11	TEI10, LTE-RF	R2-133655
R2-133782	Adding EARFCN extension to the variable EUTRA_FREQUENCY_INFO_LIST_FACH	Huawei, HiSilicon	25.331	5480	-	F	REL-11	Cell_FACH_enh-Core	R2-133665
R2-133783	Clarification for stopping the RLC Timer_Reordering timer	NSN	25.331	5481	-	F	REL-11	HSDPA_MFTX-Core	R2-133666
R2-133784	Clarification on MDT Accessibility Measurements discard	Huawei,HiSilicon,NSN, Nokia	25.331	5482	-	F	REL-11	eMDT_UMTSLTE-Core	R2-133609
R2-133785	Cleanup of wideband RSRQ measurement capability	Ericsson	25.331	5483	-	F	REL-11	LTE-L23, TEI11	R2-133413
R2-133786	Introduction of BDS in UTRAN	ZTE, CATR, CATT, Huawei, Qualcomm Incorporated, Ericsson, Intel Corporation	25.331	5484	-	B	REL-12	LCS_BDS-UTRA-Core	R2-133681

RAN2 #84 Tdoc	Title	Source	Spec	CR #	rev	cat	Release	SI/WI	RAN2 #83bis Tdoc
R2-133787	Introduction of inbound mobility to shared CSG/hybrid cell	Huawei, HiSilicon, Alcatel-Lucent, NSN	25.367	0030	-	B	REL-12	EHNB_enh3-Core	R2-133678
R2-133788	Clarification on Minimum Transport Block Size of Msg3	CATT	36.300	0589	-	F	REL-11	TEI11	R2-133633
R2-133789	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	36.306	0158	-	F	REL-9	TEI9, LTE-RF	R2-133689
R2-133790	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	36.306	0159	-	A	REL-10	TEI9, LTE-RF	R2-133690
R2-133791	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	36.306	0160	-	A	REL-11	TEI9, LTE-RF	R2-133691
R2-134411	Capturing mandatory/optional agreements on Rel-11 UE features	NTT DOCOMO, INC.	36.306	0161	1	F	REL-11	LTE_CA_enh-Core, COMP_LTE_DL-Core, eICIC_enh_LTE-Core, LTE_enh_dl_ctrl-Core, TEI11, LTE-L23	R2-133727
R2-133793	Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE	CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE	36.321	0686	-	F	REL-10	LTE_CA-Core	R2-133226
R2-133794	Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE	CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE	36.321	0687	-	A	REL-11	LTE_CA-Core	R2-133227
R2-133795	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	36.331	1364	-	F	REL-9	TEI9, LTE-RF	R2-133658
R2-133796	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	36.331	1365	-	A	REL-10	TEI9, LTE-RF	R2-133659
R2-133797	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	36.331	1366	-	A	REL-11	TEI9, LTE-RF	R2-133688
R2-133798	Addition of inter-frequency RSTD measurement capability indicator for OTDOA	Qualcomm Incorporated	36.331	1367	-	F	REL-10	TEI10, LCS_LTE	R2-133730
R2-133799	Addition of inter-frequency RSTD measurement capability indicator for OTDOA	Qualcomm Incorporated	36.331	1368	-	A	REL-11	TEI10, LCS_LTE	R2-133730
R2-133800	Clarification on supportedBand	NSN, Nokia Corporation, Qualcomm Incorporated	36.331	1369	-	F	REL-10	LTE_CA-Core	R2-133632
R2-133801	Clarification on supportedBand	NSN, Nokia Corporation, Qualcomm Incorporated	36.331	1370	-	A	REL-11	LTE_CA-Core	R2-133632
R2-133802	Capturing mandatory/optional agreements on Rel-11 UE features	NTT DOCOMO, INC.	36.331	1371	-	F	REL-11	eICIC_enh_LTE-Core, TEI11, LTE-L23	R2-133703
R2-133803	Clarification on otherwise behaviour	NSN, Nokia Corporation, Ericsson	36.331	1372	-	F	REL-11	TEI11	R2-133708
R2-133804	Corrections of the 3GPP2 references in TS 36.331	Huawei, HiSilicon	36.331	1373	-	F	REL-11	TEI11	R2-133639
R2-133805	measResultLastServCell for SON-HOF report	Qualcomm Incorporated	36.331	1374	-	A	REL-11	TEI10	R2-133637
R2-133806	Clarification to timeInfoUTC field in SIB16	Qualcomm Incorporated, Samsung	36.331	1375	-	F	REL-12	LTE-L23, TEI12	R2-133715
R2-133807	Correction to missing capability indication for inter-frequency RSTD measurements	Qualcomm Incorporated	36.355	0102	-	F	REL-10	TEI10, LCS_LTE	R2-133630
R2-133808	Correction to missing capability indication for inter-frequency RSTD measurements	Qualcomm Incorporated	36.355	0103	-	A	REL-11	TEI10, LCS_LTE	R2-133630
R2-134396	Stage 3 CR of TS 36.355 for introducing BDS in LTE	CATR, CATT, ZTE	36.355	0104	1	B	REL-12	LCS_BDS-LTE-Core	R2-133716
R2-133810	measResultLastServCell for SON-HOF report	Qualcomm Incorporated	36.331	1377	-	F	REL-10	TEI10	R2-133637

Annex F:
RAN WG2 meeting #83bis 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 17th Oct 2013 midnight Pacific time, i.e. Fri 17.10.13 9am CEST:

[83bis#00][Joint/WiFi] Approval of LS on WiFi Interworking to SA2 and CT1 (Intel)
- The intention is to clarify the text (so that it becomes understandable from SA2/CT1 point of view) but not to add or remove questions.

=> Intended outcome: Agreed LSout provided in R2-133697
Note: It was decided after the start of the email discussion to merge TP R2-133698 and the TP R2-133725 of email discussion [83bis#01] in a TR 37.834 update v1.1.1 R2-133735 and to attach a TR update to the LSout instead of the TPs.

conclusion: Email discussion was kicked off by Sasha Sirotkin (Intel) on 14.10.2013.
LSout R2-133697 was agreed on 22.10.2013 including
the agreed TR 37.834 v1.2.0 in R2-133736.

[83bis#01][Joint/WiFi] TP for RAN and ANDSF based WLAN interworking (Orange)
- A TP for TR 37.834 should be based on R2-133721 and R2-133649 and capture the agreements made in this meeting.

=> Intended outcome: Agreed TP for TR 37.834 provided in R2-133725.

conclusion: Email discussion was kicked off by Dawid Koziol (Orange) on 14.10.2013.
TP R2-133725 for TR 37.834 was agreed on 18.10.2013.

[83bis#02][LTE/SCE] TR update capturing agreements on SCE-HL (DCM)

=> Intended outcome: Agreed TR 36.842. v0.3.1 will be provided in R2-133712.

conclusion: Email discussion was kicked off by Hideaki Takahashi (NTT DOCOMO) on 15.10.2013.
TR 36.842 v0.4.0 was agreed in R2-133732 on 21.10.2013.

[83bis#03][LTE/D2D] TP for TR 36.843 on D2D including RAN2 agreements (QC)

=> Intended outcome: Endorsed TP for RAN1 TR 36.843 provided in R2-133699 and agreed LSout to RAN1 in R2-133726.

conclusion: Email discussion was kicked off by Sudhir Baghel (Qualcomm) on 14.10.2013.
TP to RAN1 TR 36.843 was endorsed in R2-133699 on 18.10.2013.
LSout R2-133726 was agreed on 18.10.2013 including the TP.

[83bis#04][LTE/GC] TR update capturing agreements on GCSE (ALU)

=> Intended outcome: Agreed TR 36.868. v0.1.1 will be provided in R2-133711.

conclusion: Email discussion was kicked off by Chandrika Worrall (Alcatel-Lucent) on 14.10.2013.
TR 36.868 v0.2.0 was agreed in R2-133733 on 19.10.2013.

[83bis#05][UMTS/FEUL] TR update capturing agreements on Further Enhanced UL (Ericsson)
- Review TR 25.700 v0.4.2 capturing the agreements and technical proposals of RAN2#83bis. A draft of this version has to be provided by the rapporteur early in the week after RAN2 #83bis via the RAN2 reflector (revision marks compared to v0.4.0 R2-133677).

=> Intended outcome: Agreed TR 25.700 v0.5.0 (TDoc to be allocated by MCC).

conclusion: Email discussion was kicked off by Alessandro Caverni (Ericsson) on 14.10.2013.
TR 25.700 v0.5.0 was agreed in R2-133734 on 19.10.2013.

Email discussions with finalisation by Thu 31st Oct 2013 midnight Pacific time, i.e. Fri 01.11.13 9am CET:

TDoc numbers for the following email discussions have to be requested via ADN for RAN2 #84.

[83bis#10][Joint/RACH] Chiba issue and aggressive RACH (Sony)
- More detailed analysis of the problem
- Chiba: Is Latency or UL power the main problem?
- Aggressive RACH: identify the actual root cause of the observed problem
- Discuss and compare solutions (including existing solutions)

=> Intended outcome: Email discussion summary to the next meeting and agreeable CRs if applicable.

conclusion: Email discussion was kicked off by Brian Martin (Sony) on 14.10.2013.
Email discussion summary was provided to RAN2 #84 in R2-133811.

[83bis#11][LTE/RRC] Conditional presence statements (Samsung)
- Discuss a draft CR until next meeting

=> Intended outcome: Agreeable 36.331 CR

conclusion: Email discussion was kicked off by Himke van der Velde (Samsung) on 21.10.2013.
Email discussion summary was provided to RAN2 #84 in sR2-133957.
Also a 36.331 CR was provided in R2-133958.

[83bis#12][LTE/SCE] Capture further evaluation results in TR (DCM)
- Include further evaluation results of solutions presented so far in the study item
- Should cover also the concepts that were finally not prioritized to ensure that the work is captured and available later.

=> Intended outcome: TP for TR 36.842 (or TR update) to next meeting

conclusion: Email discussion was kicked off by Hideaki Takahashi (NTT DOCOMO) on 24.10.2013.
Email discussion summary (incl. a TP) was provided to RAN2 #84 in R2-134429.

[83bis#13][LTE/SCM] Solutions candidates for prioritizing VoLTE (LG)
- List and compare solution candidates for prioritized use case.
- May discuss IDLE and CONNECTED

=> Intended outcome: Email discussion summary and agreeable TP.

conclusion: Email discussion was kicked off by Youngdae Lee (LG) on 15.10.2013.
Email discussion summary was provided to RAN2 #84 in R2-134184.

[83bis#14][LTE/MAC] Msg3/TTI bundling (ZTE)
- Check the current specification and implementation of the legacy UE behaviour for collision case between UL grant of C-RNTI of new transmission and UL grant of Temporary C-RNTI of retransmission.
- If something is not clear, discuss the UE behaviour for Rel-11.

=> Intended outcome: Email discussion summary and agreeable 36.321 CR if necessary.

conclusion: Email discussion was kicked off by Zhongda Du (ZTE) on 23.10.2013.
Email discussion summary was provided to RAN2 #84 in R2-133907.

[83bis#15][UMTS/SIBe] Capture agreements on SIB enhancements (Ericsson)
- Review a TP to TR 25.704 (with revision marks compared to v0.1.0 in R2-133679) capturing the agreements reached during RAN2#83bis. The rapporteur is tasked to provide a proposal for the TP in R2-133680 early in the week after RAN2 #83bis via the RAN2 reflector.
- note: R2-133680 as a RAN2 #83bis TDoc will be the input of the email discussion and will get the status postponed when available; for the outcome of the email discussion a TDoc has to be requested via ADN for RAN2 #84 where a decision will be made.

=> Intended outcome: Agreeable TP to TR 25.704 for the next RAN2 meeting

conclusion: Email discussion was kicked off by Martin van der Zee (Ericsson) on 15.10.2013.
TP to TR 25.704 was provided to RAN2 #84 in R2-134186.

Annex G:
LTE UP session

On Tuesday (AI 6.1.2, AI 6.2.2), Wednesday morning (AI 7.2.3) and Thursday afternoon (AI 7.10.2) of RAN2 #83bis, in parallel to the main LTE session an LTE User Plane session was held in room White Hall chaired by RAN2 vice-chairman SeungJune Yi (LG) addressing user plane (UP) aspects of LTE.
The corresponding report of this session R2-133645 was presented on Fri in the joint session and the contents is provided here in this Annex G for convenience reasons.

Note: Changes compared to R2-133645 are shown in text (just sections 7.2 and 7.10 were exchanged here).

6.1 LTE Rel-10 and earlier release WIs

6.1.2 User Plane

The documents in this AI will be treated in the UP session.

CA:

R2-133226 Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE
CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE CR 36.321 F REL-10 LTE_CA-Core
- NTT DCM has concerns that the change may have conflict with other part of specification such as TAT. CATT think the impact is isolated. NTT DCM think that the UE cannot transmit the HARQ feedback if TAT expires. Samsung think we can address the NTT DCM concern by removing “always be sent and thus”.
- LG propose to add “the MAC PDU including”. Samsung think it is a separate issue. LG clarified that the feedback is associated with MAC PDU not with MAC CE. ZTE suggest to say “the MAC PDU containing”.

=> Remove “always be sent and thus”.
=> Add “the MAC PDU containing”.
=> Agreed in principle with these changes.

R2-133227 Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE
CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE CR 36.321 A REL-11 LTE_CA-Core
=> Agreed in principle with the above changes.

Msg3/TTI bundling:

Does the NOTE in 5.4.1 apply to UL grant for TTI bundling?
- *If yes, does the NOTE in 5.4.1 apply to Msg3 new tx and TTI bundling adaptive retx case?*
  - *[Chairman’s observation: Msg3 new tx may be prioritized over both TTI bundling adaptive and non-adaptive retx according to procedure in 5.4.2.2.]*
- *If no, what shall UE do if Msg3 new tx and TTI bundling new tx / adaptive retx collide?*

What shall UE do for TTI bundling new tx + Msg3 retx case?
- *[Chairman’s observation: For same HARQ process, TTI bundling new tx may be prioritized according to procedure in 5.4.1. For different HARQ processes, nothing is specified.]*

If Msg3 tx is prioritized over TTI bundling tx, what shall UE do for remaining bundle transmission?
- *a. Discard the remaining bundle*
- *b. Continue the remaining bundle with RV increment*
- *c. Leave it up to UE implementations*

R2-133249 Discussion on the collision between TTI bundle and Msg 3 SamsungDisc REL-11 TEI11, LTE-L23 [Moved from 6.2.2 to 6.1.2]
- CATT want to first clarify that whether the 2nd to 4th transmission in the TTI bundle is a new transmission of retransmission. Chairman clarified that only the first one is a new

transmission and all the others are retransmission. ZTE asked whether we want to differentiate the collision between the first one and the rest of the TTI bundle. Ericsson think all the subframes of the TTI bundle is triggered by a PDCCH, so they should be handled together. Samsung wants to clarify the UE behavior not discussing every details.

- NSN wants to confirm the Table 2 first. NSN agree with the Table 2, and leave the specification with unclarity. Huawei agree with Table 2, and agree that we can leave it up to UE implementation because it is the corner case. AsusTek think for the second case TTI bundling new transmission is performed. ZTE think for the second case UE should transmit Msg3. ZTE think if the UE receives UL grant for TTI bundling for the second case, it is the false alarm. AsusTek think collision occurs only for new-new or re-re transmission case.

=> RAN2 confirm that the NOTE in 5.4.1 applies to TTI bundling case.

For the case TTI bundling new tx + Msg 3 retx

- AsusTek, Panasonic, Intel, LG think UE should perform TTI bundling new tx. AsusTek think the RA procedure is considered successful by the procedure in 5.1.5. QC think for the collision with Msg3 non-adaptive retransmission, the UE behavior is not clear. Samsung think anyway the UE flushes Msg3 buffer, it doesn't matter whether the retransmission is adaptive or non-adaptive. ZTE has sympathy for the QC's comment but think adaptive retransmission of Msg3 is quite rare case. Panasonic think the UE will flush the HARQ buffer for Msg3, so there will be only one UE behavior. Samsung agree with Panasonic. AsusTek think if UE receives UL grant of C-RNTI, the UE will flush the HARQ buffer for Msg3, so there is only one UE behavior. Intel think support of simultaneous reception of UL grant of C-RNTI and UL grant of Temporary C-RNTI is not defined in 36.302. Panasonic think for C-RNTI the UE decodes USS and for Temporary C-RNTI the UE decodes CSS, so the UE can decode both in parallel. NSN propose to have e-mail discussion as this is related to legacy. LG think e-mail discussion is not helpful because companies already implemented their UEs. MediaTek agree with LG that e-mail discussion is not helpful, and this issue is not related to TTI bundling. MediaTek think that if companies find any problem they can bring up the paper. Huawei agree with MediaTek. NSN think it is important to have common understanding.

=> RAN2 think the UE performs TTI bundling new transmission if it is collided with Msg3 non-adaptive retransmission.

=> **[EMAILDISC]** **[83bis#14]** Check the current specification and implementation of the legacy UE behavior for collision case between UL grant of C-RNTI of new transmission and UL grant of Temporary C-RNTI of retransmission. If something is not clear, discuss the UE behavior for Rel-11. [ZTE].

For the case TTI bundling retx + Msg 3 new tx

- Ericsson confirms the Table 2. Samsung think following procedure text in 5.4.2.2 is more logical. Ericsson think for adaptive retransmission of TTI bundling case, the UE follows the NOTE in 5.4.1, so it is up to UE implementation. LG agree with Ericsson. LG think by the NOTE in 5.4.1, the UE can deliver UL grant of adaptive retransmission of TTI bundling instead of UL grant for Msg3. AsusTek think if the UE chooses UL grant of adaptive retransmission of TTI bundling, it is not clear how the UE proceeds the RA procedure. NEC agree with AsusTek, and thus we should prioritize Msg3. LG think we agreed at the last meeting that if UE choose UL grant for retransmission of TTI bundling, the RA procedure should be stopped. AsusTek think the agreement in the last meeting is only for new-new collision case. NEC wonders what if the eNB issues new UL grant for Msg3 later. LG think it is very rare case, and we can rely on BSR timer. Intel think the reasonable implementation is to prioritize Msg3. LG think this is a legacy issue, and wants to leave it up to UE implementation.
- CATT want to clarify whether the 2nd to 4th bundle is adaptive or non-adaptive retransmission. Ericsson want to clarify that the adaptive retransmission covers all subframes within a TTI bundle. AsusTek think it is quite clear that the 2nd to 4th bundle is non-adaptive retransmission according to the text in 5.4.2.1.

=> RAN2 confirms that for TTI bundling only the first subframe is adaptive retransmission, and all the following subframes are non-adaptive retransmission.

=> RAN2 think the UE performs Msg3 new transmission if it is collided with TTI bundling non-adaptive retransmission.

=> RAN2 think it is up to UE implementation if Msg3 new transmission is collided with TTI bundling adaptive retransmission.

For the case TTI bundling retx + Msg 3 retx

- Ericsson think the procedure text in 5.4.2.2. should apply only for TTI bundling non-adaptive retransmission case. AsusTek disagrees, the text in 5.4.2.2 should apply to both adaptive and non-adaptive retransmission of TTI bundling. CATT agree with AsusTek. CATT think for Msg3 new transmission and TTI bundling adaptive retransmission case, we can rely on the NOTE in 5.4.1, but for Msg3 retransmission case, it is already clear in 5.4.2.2 that UE prioritizes Msg3 retransmission. AsusTek think retransmission collision case occurs with two different HARQ processes, so in this case the procedure text in 5.4.2.2.

=> RAN2 think the UE performs Msg3 retransmission if it is collided with TTI bundling retransmission.

For the remaining bundle after Msg3 transmission

- Samsung clarified that this case happens when different HARQ processes are used for Msg3 and TTI bundling. Huawei think even if the same HARQ process is used, the issue still exists because depending on UE implementation, the UE can get the MAC PDU from the upper layer for the remaining TTI bundling. ZTE think with the current specification, whether to transmit the remaining bundle is up to UE implementation. ZTE think the sensible UE implementation is to stop the remaining bundle after Msg3 transmission. Samsung think the issue is what if UE choose to keep transmitting remaining bundle. AsusTek think this case is not rare. AsusTek think for the retx-retx collision case, the current specification is clear that the UE continues remaining bundle transmission after Msg3 transmission, not increasing the RV value. Panasonic think it is not crystal clear. Huawei agree that the current specification is not clear, and want to leave it up to UE implementation.

=> RAN2 confirms that whether to continue remaining bundle transmission after Msg3 transmission is up to UE implementation.

- AsusTek wonders whether we should have this agreement to the MAC specification. LG think current specification already leaves it up to UE implementation. Intel think the current specification is not clear for the remaining bundle. QC does not want to change up to Rel-10. Samsung think there is no big problem in the field, so don't want to change anything.

=> RAN2 confirms that if UE choose to continue remaining bundle transmission after Msg3 transmission, there will be RV value problem.

R2-133277 The HARQ operation for TTI bundling and Random Access procedure ASUSTeK Disc REL-10 TEI10, LTE-L23

- AsusTek think we need to change the NOTE in 5.4.1 so that the NOTE covers the case of new transmission and adaptive retransmission of TTI bundling.

=> May comeback for the next meeting to change the specification if the agreements above are not aligned with the specification.

R2-133427 Collision of TTI bundle and Msg3 Ericsson Disc REL-10 TEI10, LTE-L23
R2-133230 Collision between Msg3 and TTI bundling CATT Disc REL-10 TEI10, LTE-L23
R2-133355 TTI Bundling and Msg3 LG Electronics Inc. Disc REL-11 TEI11, LTE-L23
[Moved from 6.2.2 to 6.1.2]
R2-133487 Discussion on TTI bundling and Msg3 transmission Intel Corporation Disc REL-10 TEI10
R2-133152 Discussion on priority between msg3 and other UL grant ZTE Disc REL-10 LTE-L23,TEI10
R2-133377 Discussion on collision between TTI bundling and Msg3 transmission Huawei, HiSilicon Disc REL-10 TEI10

=> All documents are not treated as covered by discussion in R2-133249.

CRs

R2-133231 Modification on the collision of Msg3 and TTI bundling CATT CR 36.321 F REL-10 TEI10, LTE-L23
R2-133232 Modification on the collision of Msg3 and TTI bundling CATT CR 36.321 A REL-11 TEI10, LTE-L23
R2-133153 Priority between msg3 and other UL grant ZTE CR 36.321 F REL-10 LTE-L23,TEI10
R2-133154 Priority between msg3 and other UL grant ZTE CR 36.321 A REL-11 LTE-L23,TEI10

=> All CRs are not agreed.

6.2 LTE Rel-11 WIs

6.2.2 User Plane

The documents in this AI will be treated in the UP session.

Dynamic scheduling of TTI bundling

Basic operation of TTI bundling:

- *TTI bundling pattern is (re-)established when a UL grant is received while all HARQ buffers are empty?*

Allow multiple TTI bundling patterns if a UL grant is not collided with ongoing HARQ process?

When a PDCCH which is collided with existing TTI bundling pattern is received

- *a. Ignore PDCCH*
- *b. Flush all HARQ buffers and establish new TTI bundling pattern*
- *c. Leave it up to UE implementation*

R2-133250 Discussion on TTI bundling Samsung Disc REL-11 TEI11, LTE-L23

Proposal 1

- AsusTek agree with the proposal. ALU ask what's the meaning of establishing the TTI bundling pattern. Samsung clarified that establishing pattern means the timing of valid UL grant can be received. MediaTek think from the current specification only one of the four HARQ process is fixed when UL grant is received. Ericsson agree with MediaTek. Samsung think it is not clear in the current specification, and want to fix the UE behavior.

=> Noted

R2-133530 Dynamic scheduling of TTI bundles Ericsson Disc REL-11 TEI11, LTE-L23

- Samsung think "ongoing HARQ process" needs to be clarified. Samsung interpretation of "ongoing HARQ process" means that the HARQ process with data in the buffer. Ericsson agree with Samsung interpretation. LG ask if we go for solution 3 then is there any impact on current specification. Ericsson think it depends on how you interpret the current specification. Samsung ask if solution 3 allows interleaving of multiple TTI bundling pattern. Samsung wonders what's the benefit of interleaving of multiple patterns. Ericsson think the benefit is scheduling flexibility and false alarm. Panasonic think solution 3 still has false alarm.
- Panasonic think solution 1 could be a good compromise. Ericsson think solution 1 has a problem when false alarm occurs.

=> Noted

R2-133228 Dynamic scheduling of TTI bundling CATT Disc REL-11 TEI11, LTE-L23

- Samsung wonders why the eNB want to change the bundling pattern except for the false alarm case. CATT think it provides scheduling flexibility to the eNB. Samsung does not see any need for change.

=> Noted

Show of hands:

Should we allow interleaving of multiple TTI bundling patterns?

- Yes [6 companies]
- No [8 companies]

=> For Rel-11, the UE behavior is unclearly specified if network tries to change the UL bundling timing if the data is still in HARQ buffer. It is allowed for network to change the UL bundling timing if all UE's HARQ buffers are empty.

TTI bundling colliding case

- Samsung think it is ok to allow either ignore PDCCH or follow PDCCH, so we don't need to change anything. Panasonic wants to flush the buffer and follow PDCCH. Ericsson think flushing the buffer is not so beneficial.

R2-133351 TTI Bundle Shifting LG Electronics Inc. Disc REL-11 TEI11, LTE-L23

R2-133255 On the behavior of TTI bundling MediaTek Inc. Disc REL-10 TEI10, LTE-L23

[Moved from 6.1.2 to 6.2.2]

R2-133312 Support of dynamic scheduling of TTI bundle transmissions Panasonic Disc REL-11 TEI11, LTE-L23
=> All documents are not treated as covered by discussion in R2-133228.

CRs

R2-133252 UL grant patterns for TTI bundling Samsung CR 36.321 F REL-11 TEI11, LTE-L23
R2-133229 Clarification on dynamic scheduling of TTI bundling CATT CR 36.321 F REL-11 TEI11, LTE-L23
R2-133352 Clarification on TTI Bundle Shifting LG Electronics Inc. CR 36.321 F REL-11 TEI11, LTE-L23
=> All CRs are not agreed.

Others

R2-133429 Clarification on SPS implicit release Ericsson, Qualcomm Incorporated Disc REL-11 TEI11, LTE-L23
- Ericsson explain that the proposal is co-signed by Verizon, AT&T, Softbank Mobile, eAccess.
- Samsung wants to study further for the next meeting. Ericsson is ok to discuss again at the next meeting. ZTE ask if the Ericsson concern is the delay of implicit release by reactivation. Ericsson confirms. Huawei wants to study further about the scenario. LG think there is no big gain to keep the counter running at reactivation, but ok to study for the next meeting.

=> Study for the next meeting.

R2-133247 Discussion on PHICH missing due to glitch Samsung Disc REL-11 TEI11, LTE-L23
- NSN think the specification is already clear. Samsung think the previous agreement captured in Chairman's note is not clear.

=> Previous agreement in Chairman's note of RAN2#81bis was wrong in that HARQ feedback is set to received PHICH in case there is glitch at the time of PUSCH transmission.
=> Up to Rel-11, HARQ_FEEDBACK is not delivered to MAC and stay as NACK if there is glitch at the time of PUSCH transmission
=> Up to Rel-11, HARQ_FEEDBACK stays as NACK if there is glitch at the time of PHICH reception

7.2 SI: Small Cell Enhancements - Higher Layer

(FS_LTE_SC_enh_hilayer, leading WG: RAN2, REL-12, started: Dec.12, target: Sep.13, WID: RP-122033)
TR 36.842 v0.3.0 (R2-133041)
See way-forward approved at RAN-61: RP-131374

7.2.3 User Plane Details

Random access procedure? Power headroom reporting? BSR, LCP? Impact on DRX? Handling of activation/deactivation? Which depend on or impact the UP architecture decision.

Number of MAC entities

R2-133261 Single MAC versus Dual MAC Samsung Disc
- NSN think it is not just a modeling issue. As we have selected 1A and 3C, the number of MAC entities is important for future discussion. Ericsson think there is not much difference whether the MAC is common or separate. NSN think at least LCP and BSR have difference. Panasonic think whether the MAC is single or dual depends on how independent the MAC procedures between MeNB and SeNB. ZTE think this issue is quite related to whether we support bearer split or not. CATT think if we support bearer split, we have to have dual TX/RX. Samsung think we should try to achieve common solution for 1A and 3C. NSN think for 1A single MAC is enough, but for 3C it should be dual MAC. Huawei think single vs dual MAC depends on eNB scheduling, and considering that there are dual MAC in eNB side, we should go for dual MAC approach. ALU agree with Huawei.

- Chairman clarify that this session should discuss UP issues not impacted by UP architecture.
- ZTE think BSR, PHR is not decided yet, so it is premature to decide. IDT think separate MAC has less impact.

=> Noted

DRX

Is DRX configuration independent for MeNB and SeNB?
Is DRX operation independent for MeNB and SeNB?

R2-133433 DRX for dual connectivity Ericsson Disc
- NSN support, and want to change "independent" to "separate". Samsung think the proposal is logical, but don't like to make decision for now. NTT DCM support because Active Time is not aligned between eNBs. LG support.
- ZTE ask if there is any kind of coordination between eNBs. Nokia support independent configuration, but some coordination is needed. ALU ask if the coordination means synchronization. Huawei think from UE point of view DRX should be separate, but the coordination between eNBs is needed. LG think the coordination is not needed considering the backhaul delay. QC think DRX between two eNB should be aligned as much as possible.

=> Noted

Working assumption
1. Separate DRX configurations should be supported for MeNB and SeNB.
2. Separate DRX operations (timers and active time) should be allowed for MeNB and SeNB.

FFS if the eNBs coordination is needed for DRX configuration

R2-133542 DRX consideration for dual connectivity Alcatel-Lucent Shanghai Bell, ALcatel-Lucent Disc
R2-133105 Discussion on DRX for Inter Node Radio Resource Aggregation ITRI Disc
R2-133539 Issunes on DRX for dual connectivity LG Electronics Inc. Disc
R2-133532 Design of DRX for dual connectivity Broadcom Corporation Disc
R2-133313 DRX procedure for dual connectivity Panasonic Disc

=> All documents are not treated

Random Access

Which RA procedure for SeNB is supported?
- *Only contention-free RA procedure*
- *Both contention-free and contention-based RA procedures*

In RA procedure for SeNB, is RAR received from SeNB?

Is parallel RA procedure, one for MeNB and the other for SeNB, supported?

R2-133431 Random Access for dual connectivity Ericsson Disc
Proposal1 Contention free random access and contention based random access should be supported towards MeNB and SeNB.
- Panasonic think if the UE has always D-SR, contention based RA procedure is not needed. Ericsson think that whether to configure D-SR is up to SeNB. CATT agree with Ericsson. ZTE, Samsung think if SR procedure fails, the UE shall perform RA procedure. IDT think 3C does not work well without D-SR. NSN think the use of D-SR is FFS in RAN1, so support the proposal. LG think if the UE can receive MSG2 from the SeNB, then contention based RA procedure can be supported. NTT DCM support the proposal. Huawei support contention-free RA procedure, but want to see the need for contention-based RA procedure. Ericsson think that if the SeNB supports only contention-free RA procedure, the preamble may be run out. ALU think there are not many UEs in small cell, so reserving dedicated preamble may not be an issue. Samsung ask if there is no contention based RA procedure, how the SeNB knows that the small cell addition is completed. ZTE think dedicated preamble can be used. ZTE ask if SR procedure fails,

how the UE do without contention based RA procedure. Huawei think if SR fails and UE does not have contention based RA procedure, the UE can send BSR to MeNB.

Proposal 2 Parallel random access should be supported for dual connection.
- Samsung, NTT DCM think it is premature to discuss this issue. LG think sending preamble to both eNBs may be power-limiting problem, so we have to wait until RAN1 decision. ZTE think the power-limiting problem can be avoided by eNB coordination such as preamble transmission in different subframes. LG think if contention based RA procedure is supported, the eNB coordination may not be possible.

Proposal 3 MSG2 should be sent from the eNB to which the preamble was sent.
- IDT support the proposal, and think the RA procedure for SeNB should be something like PCell procedure. Panasonic support the proposal. CATT support the proposal, and also want to have PCell-like small cell for SeNB. NSN think PCell-like small cell make sense, but this needs to be discussed in main session. Samsung ask if we support multiple TAG in SeNB.
- Chairman ask whether we send LS to RAN1 to inform that Msg2 is sent from the SeNB. Panasonic think that as long as contention-based RA procedure supported, the Msg2 should be sent in CSS.

=> Noted

Agreements
1. Contention-free RA procedure is supported towards SeNB.
2. As a working assumption, contention-based RA procedure is supported towards SeNB.
3. Msg2 is sent from the eNB to which the preamble was sent.

R2-133315 Support of RACH procedure for SeNB Panasonic Disc
R2-133540 Issues on Random access for dual connectivity LG Electronics Inc Disc
R2-133269 Random Access on SCell in inter-ENB CA Samsung Disc
R2-133289 Discussion of random access procedure for inter-node CA HTC Disc
R2-133359 Random Access Procedure for Small Cell Enhancements ETRI Disc
=> All documents are not treated

Activation/Deactivation

Is Activation/Deactivation supported for SeNB?
- *If yes, is special SCell (never deactivated) defined among cells served by the SeNB?*

R2-133273 Small Cell Activation and Deactivation LG Electronics Inc. Disc
- NSN think considering the activation delay, the activation delay due to backhaul delay may not be problem. ZTE wonders whether the Activation command and feedback need to be exchanged between MeNB and SeNB. Huawei think SeNB may have multiple cells. CATT agrees, and want to have per-eNB activation/deactivation. IDT think the problem is not delay but synchronization. LG ask what the benefit of having activation/deactivation in small cell if the UE has independent DRX per eNB. Panasonic agree to per-eNB activation/deactivation, but MeNB should not be able to control the activation/deactivation of SeNB. ZTE think if there is only one cell in SeNB, the MeNB should be able to control. Ericsson think one cell in SeNB should always be activated like PCell. Ericsson think if MeNB sends activation/deactivation command for SeNB cell, there will be synchronization problem. NTT DCM, NSN agrees.
- Samsung wants to see the gain of having activation/deactivation for small cells. Huawei think if there is only one cell in SeNB, activation/deactivation may not be needed. NEC wants to know first how many cells can be configured in SeNB. QC wants to confirm there is only one MeNB and SeNB. NTT DCM think we should discuss first the framework of dual connectivity. Ericsson think at least one cell is configured in SeNB, so at least one cell in SeNB should always be activated. NTT DCM agrees. LG agrees.
- LG think we haven't discuss the CA and small cell together.

=> Need for activation/deactivation of small cells depend on how many small cells are configured in SeNB.

R2-133378 UE power saving in dual connectivity CATT Disc

=> The document is not treated

BSR/PHR

How does the SeNB receive BSR/PHR?
- *receive via MeNB*
- *receive directly from UE*

R2-133259 Scheduling Information handling in inter-ENB carrier aggregation SamsungDisc
- Ericsson think there would be much delay if we support Xn forwarding. Huawei think both schemes are needed depending on the backhaul delay. QC think for 1A, Xn forwarding scheme is not suitable. QC think BSR scheme depends on UP architecture. QC think BSR and PHR are different in that delay is critical for PHR. Panasonic think PHR should be sent to corresponding eNB. NSN wants to have common solution for BSR not depending on UP architecture. IDT think for PHR we have to decide first whether the TDM approach is used. Samsung wants to have single solution for all UP architectures.

=> Noted

R2-133412 Uplink scheduling and BSRs with dual connectivity Ericsson Disc
- ZTE ask if bearer split in UL is assumed. Ericsson confirms. ZTE think the BSR depends on whether we support UL bearer split or not. Chairman wonders if the DL bearer split is supported how is the UL bearer split not supported.

=> Noted

Agreements
1. For eNB-specific bearer, UE sends BSR information related to specific bearer towards the eNB for which corresponding bearer belongs to.

R2-133541 Issues on BSR for dual connectivity LG Electronics Inc Disc
R2-133534 BSR impacts by bearer split LG Electronics Inc Disc
[Moved from 7.2.1 to 7.2.3]
R2-133538 Management of UE Transmit Power in Dual Connectivity LG Electronics Inc Disc
=> All documents are not treated

LCP

R2-133523 MAC modifications with dependency on UP architecture options Alcatel-Lucent, Alcatel-Lucent Shanghai Bell Disc
R2-133536 LCP impacts by bearer split LG Electronics Inc. Disc
[Moved from 7.2.1 to 7.2.3]
=> All documents are not treated

MAC-related

R2-133146 Discussion on UP common issues ZTE Disc
R2-133211 MAC details for dual connectivity NSN, Nokia Corporation Disc
R2-133310 User plane details related to the SCE user plane architecture selection Renesas Mobile Europe Ltd. Disc
R2-133496 MAC layer aspects for dual connectivity Intel Corporation Disc
R2-133236 MAC Aspects of Dual Connectivity InterDigital Communications Disc
=> All documents are not treated

Others

R2-133208 Discussion on master-slave RLCs Fujitsu Disc
[Moved from 7.2.1 to 7.2.3]
R2-133209 Flow control and QoS-aware data forwarding Fujitsu Disc
[Moved from 7.2.1 to 7.2.3]
=> All documents are not treated

7.10 LTE TEI12

7.10.2 LTE TEI12 UP

The documents in this AI will be treated in the UP session.

R2-133267 Discussion on general gap handling SamsungDisc REL-12 TEI12, LTE-L23
- LG think measurement gap and other gap are different because measurement gap is configured by RRC while other gaps are configured by UE implementation. Samsung think general gap makes UE behavior more predictable. Ericsson, ZTE agree with LG. Samsung think whether the eNB knows the occurrence of Gaps is not a problem.

=> No support.

R2-133268 Introducing general gap handling in the MAC specification SamsungCR 36.321 F REL-12 TEI12, LTE-L23
=> Not agreed.

R2-133343 An optimization in logical channel prioritization Renesas Mobile Europe Ltd. Disc REL-12 TEI12, LTE-L23
- This document is presented by Broadcom.
- NSN think the UE cannot predict the grant. NSN think the retransmitted PDU is prioritized over new PDU in RLC. Samsung is not happy with specifying detail in LCP rule. CATT think the proposal is already allowed in current specification.

=> No support.

Not Available

R2-133394 Correction about FMS in PDCP Huawei, HiSilicon CR 36.323 F REL-12 TEI12, LTE-L23
withdrawn

Summary of the UP ad hoc meeting

In-principle agreed CRs

R2-133226 Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE CR 36.321 F REL-10 LTE_CA-Core

R2-133227 Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE CR 36.321 A REL-11 LTE_CA-Core

Agreed outgoing LS

None

Comeback on Friday

None

E-mail discussion [83bis#14] for the next meeting

Collision between C-RNTI UL grant for new tx and Temporary C-RNTI UL grant for retx (ZTE)

Comeback at the next meeting

SPS implicit release counter handling at SPS reactivation (related to R2-133429)

Annex H:
History

Document history		
Date	**TSG RAN WG2 Tdoc**	**Subject**
29.09.2013	-	Skeleton report for RAN WG2 #83bis provided before the meeting
01.10.2013	-	Updated skeleton report provided before RAN WG2 #83bis
02.10.2013	-	Update 2 of the skeleton report provided before RAN WG2 #83bis
03.10.2013	-	Update 3 of the skeleton report provided before RAN WG2 #83bis
04.10.2013	-	Update 4 of the skeleton report provided before RAN WG2 #83bis
22.10.2013	-	Draft report v0.1 of RAN WG2 #83bis provided after RAN WG2 #83bis
28.10.2013	-	Draft report v1.0 of RAN WG2 #83bis provided after RAN WG2 #83bis (revision marks compared to v0.1)
03.11.2013	R2-133741	Draft report v2.0 of RAN WG2 #83bis provided after RAN WG2 #83bis (revision marks compared to v1.0)
07.11.2013	R2-133765	Draft report v3.0 of RAN WG2 #83bis provided after RAN WG2 #83bis (revision marks compared to v2.0)
15.11.2013	R2-134604	Report of RAN2 #83bis as agreed by RAN2 #84

Author: **Dr. Joern Krause (3GPP TSG RAN WG2 MCC Support)**

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Appendix 23a

Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment
10.3: UTRA: REL-12 WI BeiDou Navigation Satellite System (BDS) for UTRA	Yes	in principle agreed		R2-133150	Introduction of BDS in UTRAN	ZTE, CATR, CATT, Huawei, Intel Corporation	CR	25.306			B		REL-12	LCS_BDS-UTRA-Core		
06.1.2: LTE: REL-10 and earlier release WIs: UP	Yes	in principle agreed		R2-133226	Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE	CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE	CR	36.321			F		REL-10	LTE_CA-Core		
06.1.2: LTE: REL-10 and earlier release WIs: UP	Yes	in principle agreed		R2-133227	Clarification on the HARQ feedback for SCell activation/deactivation command MAC CE	CATT, NSN, Huawei, HiSilicon, LG Electronics Inc., Samsung, Ericsson, ZTE	CR	36.321			A		REL-11	LTE_CA-Core		
09.4: UTRA: REL-11 TEI11	Yes	in principle agreed		R2-133411	Cleanup of wideband RSRQ measurement capability	Ericsson	CR	25.306			F		REL-11	TEI11, LTE-L23		
09.4: UTRA: REL-11 TEI11	Yes	in principle agreed		R2-133413	Cleanup of wideband RSRQ measurement capability	Ericsson	CR	25.331			F		REL-11	TEI11, LTE-L23		
10.5.1: UTRA: REL-12 WI Further enh. to H(e)NB mobility Part 3	Yes	in principle agreed		R2-133455	Allowing reselection to a member E-UTRA CSG in CELL_FACH when E-UTRA measurement for CELL_FACH is configured	Alcatel-Lucent, Ericsson	CR	25.304			B		REL-12	EHNB_enh3-Core		
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133609	Clarification on MDT Accessibility Measurements discard	Huawei,HiSilicon,NSN, Nokia	CR	25.331			F		REL-11	eMDT_UMTSLTE-Core	R2-133385	eMDT_UMTSLTE-Core was a REL-11 WI
06.1.1: LTE: REL-10 and earlier release WIs: CP	Yes	in principle agreed		R2-133630	Correction to missing capability indication for inter-frequency RSTD measurements	Qualcomm Incorporated	CR	36.355			F	cat.A CR?	REL-10	TEI10, LCS_LTE	R2-133137	
06.1.1: LTE: REL-10 and earlier release WIs: CP	Yes	in principle agreed		R2-133632	Clarification on supportedBand	NSN, Nokia Corporation, Qualcomm Incorporated	CR	36.331			F		REL-10	LTE_CA-Core	R2-133188	
06.1.1: LTE: REL-10 and earlier release WIs: CP	Yes	in principle agreed		R2-133633	Clarification on Minimum Transport Block Size of Msg3	CATT	CR	36.300			F		REL-11	TEI11	R2-133349	
06.2.1: LTE: REL-11 WIs: CP	Yes	in principle agreed		R2-133637	measResultLastServCell for SON-HOF report	Qualcomm Incorporated	CR	36.331			F	will see also REL-10 CR at RAN2 #83bis	REL-11	TEI11	R2-133072	
06.2.1: LTE: REL-11 WIs: CP	Yes	in principle agreed		R2-133639	Corrections of the 3GPP2 references in TS 36.331	Huawei, HiSilicon	CR	36.331			F		REL-11	TEI11	R2-133475, R2-133103	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133654	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	CR	25.331			F		REL-10	TEI10,LTE-RF	R2-133564, R2-133612	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133655	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	CR	25.331			A		REL-11	TEI10,LTE-RF	R2-133564, R2-133613	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133656	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	CR	25.306			F		REL-10	TEI10,LTE-RF	R2-133565, R2-133614	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133657	Introduction of capability bit for E-UTRA Multiple Frequency Band Indicators	Huawei, HiSilicon	CR	25.306			A		REL-11	TEI10,LTE-RF	R2-133565, R2-133615	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133658	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	CR	36.331			F		REL-9	TEI9, LTE-RF	R2-133561, R2-133616	

Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133659	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	CR	36.331			A		REL-10	TEI9, LTE-RF	R2-133561, R2-133617	
08.: UTRA WIs: REL-10 and earlier releases	Yes	in principle agreed		R2-133662	Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA	Qualcomm Incorporated, Broadcom Corporation	CR	25.331			C		REL-9	RANimp-DC_HSUPA	R2-133465	RANimp-DC_HSUPA was a REL-9 WI
08.: UTRA WIs: REL-10 and earlier releases	Yes	in principle agreed		R2-133663	Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA	Qualcomm Incorporated, Broadcom Corporation	CR	25.331			C	This is not a pure shadow to R2-133465	REL-10	RANimp-DC_HSUPA	R2-133465, R2-133467, R2-133598	
09.1: UTRA: REL-11 WI Further enhancements to CELL_FACH	Yes	in principle agreed		R2-133664	Correction to the implicit release timer start for standalone HS-DPCCH	Alcatel-Lucent	CR	25.308			F		REL-11	Cell_FACH_enh-Core	R2-133456	
09.1: UTRA: REL-11 WI Further enhancements to CELL_FACH	Yes	in principle agreed		R2-133665	Adding EARFCN extension to the variable EUTRA_FREQUENCY_INFO_LIST_FACH	Huawei, HiSilicon	CR	25.331			F	remove TEI11 from WI code	REL-11	Cell_FACH_enh-Core	R2-133297	Cell_FACH_enh-Core was a REL-11 WI
09.2: UTRA: REL-11 WI HSDPA Multiflow Data Transmission	Yes	in principle agreed		R2-133666	Clarification for stopping the RLC Timer_Reordering timer	NSN	CR	25.331			F		REL-11	HSDPA_MFTX-Core	R2-133097	
09.4: UTRA: REL-11 TEI11	Yes	in principle agreed		R2-133670	Cleanup corrections to TS 25.304	HiSilicon (Rapporteur)	CR	25.304			D		REL-11	TEI11	R2-133123	
10.5.1: UTRA: REL-12 WI Further enh. to H(e)NB mobility Part 3	Yes	in principle agreed		R2-133678	Introduction of inbound mobility to shared CSG/hybrid cell	Huawei, HiSilicon, Alcatel-Lucent, NSN	CR	25.367			B		REL-12	EHNB_enh3-Core	R2-133333	
10.3: UTRA: REL-12 WI BeiDou Navigation Satellite System (BDS) for UTRA	Yes	in principle agreed		R2-133681	Introduction of BDS in UTRAN	ZTE, CATR, CATT, Huawei, Qualcomm Incorporated, Ericsson, Intel Corporation	CR	25.331			B	result of email discussion [83#14]	REL-12	LCS_BDS-UTRA-Core	R2-133149, R2-133673	
09.1: UTRA: REL-11 WI Further enhancements to CELL_FACH	Yes	in principle agreed		R2-133682	Clarification of HS-DPCCH feedabck time for Node B triggered HS-DPCCH transmission to 25.321	Huawei, Hisilicon, Qualcomm Incorporated	CR	25.321			F		REL-11	Cell_FACH_enh-Core	R2-133330, R2-133669	
08.: UTRA WIs: REL-10 and earlier releases	Yes	in principle agreed		R2-133685	Corrections of intra-frequency and inter-frequency measurements for DC-HSUPA	Qualcomm Incorporated, Broadcom Corporation	CR	25.331			C		REL-11	RANimp-DC_HSUPA	R2-133668	
09.1: UTRA: REL-11 WI Further enhancements to CELL_FACH	Yes	in principle agreed		R2-133687	Stage 2 Clarification for DTCH Related R99 PRACH Fallback	ZTE	CR	25.319			F		REL-11	Cell_FACH_enh-Core	R2-133083, R2-133675, R2-133686	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133688	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	CR	36.331			A		REL-11	TEI9, LTE-RF	R2-133561, R2-133618	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133689	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	CR	36.306			F		REL-9	TEI9, LTE-RF	R2-133562, R2-133619	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133690	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	CR	36.306			A		REL-10	TEI9, LTE-RF	R2-133562, R2-133620	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133691	Introduction of capability bit for UTRA MFBI	Huawei, HiSilicon	CR	36.306			A		REL-11	TEI9, LTE-RF	R2-133562, R2-133621	

Agenda item	Uploaded	status	Late	Tdoc	Title	Source	Type:	Spec	CR #	rev	cat	further information	Release	SI/WI	related Tdoc	comment
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133693	Further corrections on MFBI related issues	Huawei, HiSilicon	CR	25.331			F		REL-10	TEI10, LTE-RF	R2-133076, R2-133622	
04.: Joint UMTS/LTE: REL-11 and earlier releases	Yes	in principle agreed		R2-133694	Further corrections on MFBI related issues	Huawei, HiSilicon	CR	25.331			A		REL-11	TEI10, LTE-RF	R2-133077, R2-133623	
06.2.1: LTE: REL-11 WIs: CP	Yes	in principle agreed		R2-133703	Capturing mandatory/optional agreements on Rel-11 UE features	NTT DOCOMO, INC.	CR	36.331			F	revision of R2-133182 (which was at first in principle agreed but then updated)	REL-11	eICIC_enh_LTE-Core, TEI11, LTE-L23	R2-133182	
06.2.1: LTE: REL-11 WIs: CP	Yes	in principle agreed		R2-133708	Clarification on otherwise behaviour	NSN, Nokia Corporation	CR	36.331			F		REL-11	TEI11	R2-133191, R2-133638	
07.10.1: LTE: REL-12: TEI12: CP and joint CP/UP	Yes	in principle agreed		R2-133715	Clarification to timeInfoUTC field in SIB16	Qualcomm Incorporated, Samsung	CR	36.331			F		REL-12	TEI12, LTE-L23	R2-133140	
07.03: LTE: REL-12 WI: BeiDou Navigation Satellite System (BDS) for LTE	Yes	in principle agreed		R2-133716	Stage 3 CR of TS 36.355 for introducing BDS in LTE	CATR, CATT, ZTE	CR	36.355			B		REL-12	LCS_BDS-LTE-Core	R2-133285, R2-133700, R2-133706	
06.2.1: LTE: REL-11 WIs: CP	Yes	in principle agreed		R2-133727	Capturing mandatory/optional agreements on Rel-11 UE features	NTT DOCOMO, INC.	CR	36.306			F		REL-11	LTE_CA_enh-Core, COMP_LTE_DL-Core, eICIC_enh_LTE-Core, LTE_enh_dl_ctrl-Core, TEI11, LTE-L23	R2-133181, R2-133635	
06.1.1: LTE: REL-10 and earlier release WIs: CP	Yes	in principle agreed		R2-133730	Addition of inter-frequency RSTD measurement capability indicator for OTDOA	Qualcomm Incorporated	CR	36.331			F	cat.A is a real shadow CR	REL-10	TEI10, LCS_LTE	R2-133139, R2-133631, R2-133651	

Appendix 24



3GPP_TSG_RAN_WG2 Archives

October 2013, Week 2

3GPP_TSG_RAN_WG2@LIST.ETSI.ORG



Subject: Tdocs/chairs' notes of the Ljubljana meeting
From: Joern Krause <[log in to unmask]>
Reply To: Joern Krause <[log in to unmask]>
Date: Mon, 14 Oct 2013 12:05:09 +0200
Content-Type: multipart/alternative
Parts/Attachments: text/plain (793 bytes) , text/html (3467 bytes)

Dear all,
As I got a few questions (also from people who left before the meeting was closed to catch their flights):

- As usual all Tdocs of last week's meeting are on the 3GPP server under
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_83bis/Docs/

- As usual I keep all the chairs' notes under
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_83bis/Report/tmp/
until the official report is available.

- As usual the latest Tdoc list of the meeting is under
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_83bis/Tdoclist/

- As usual all outgoing LSs are kept for easier reference under:
ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_83bis/LSout/
(These LSs were already sent out last Friday, if not before).

BR
Joern

Joern Krause, ETSI MCC
[log in to unmask]

ATOM RSS1 RSS2

Appendix 25

www.3gpp.org / ftp / tsg_ran / WG2_RL2 / TSGR2_85bis / Docs

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R2-141125.zip	2014/03/21 14:12	37,5 KB
R2-141126.zip	2014/03/21 12:45	100,1 KB
R2-141127.zip	2014/03/21 14:15	38,7 KB
R2-141128.zip	2014/03/21 12:46	86,8 KB
R2-141129.zip	2014/03/21 12:31	21,4 KB
R2-141130.zip	2014/03/21 12:37	22,6 KB
R2-141131.zip	2014/03/22 6:54	110,6 KB
R2-141132.zip	2014/03/22 3:01	23,6 KB
R2-141133.zip	2014/03/22 3:15	384,7 KB
R2-141134.zip	2014/03/22 3:25	47,9 KB
R2-141135.zip	2014/03/22 2:33	23,7 KB
R2-141136.zip	2014/03/22 3:39	210,9 KB
R2-141137.zip	2014/03/22 2:48	24,6 KB
R2-141138.zip	2014/03/22 3:48	23,8 KB
R2-141139.zip	2014/03/22 4:01	23,3 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141141.zip	2014/03/22 4:08	17,4 KB
R2-141142.zip	2014/03/22 4:13	20,4 KB
R2-141143.zip	2014/03/21 15:57	20,5 KB
R2-141144.zip	2014/03/21 16:01	21,2 KB
R2-141145.zip	2014/03/21 16:13	17,2 KB
R2-141146.zip	2014/03/21 16:45	20,9 KB
R2-141147.zip	2014/03/21 16:48	25,1 KB
R2-141148.zip	2014/03/21 16:50	21,4 KB
R2-141149.zip	2014/03/21 16:54	17,9 KB
R2-141151.zip	2014/03/21 17:03	22 KB
R2-141152.zip	2014/03/20 23:55	25,2 KB
R2-141153.zip	2014/03/22 4:39	155 KB
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R2-141155.zip	2014/03/22 4:45	22,6 KB
R2-141156.zip	2014/03/22 4:48	18,7 KB
R2-141157.zip	2014/03/22 4:53	45,8 KB
R2-141158.zip	2014/03/22 4:37	42,7 KB
R2-141160.zip	2014/03/22 0:40	24,4 KB
R2-141161.zip	2014/03/22 0:42	35,3 KB
R2-141162.zip	2014/03/22 0:46	32,6 KB
R2-141163.zip	2014/03/22 4:07	100 KB
R2-141164.zip	2014/03/22 4:34	52,9 KB
R2-141165.zip	2014/03/21 16:31	317,4 KB
R2-141166.zip	2014/03/22 4:11	47,1 KB
R2-141167.zip	2014/03/22 4:20	99,5 KB
R2-141168.zip	2014/03/21 16:25	34,6 KB
R2-141169.zip	2014/03/21 16:27	32,9 KB
R2-141171.zip	2014/03/21 16:28	38,2 KB
R2-141172.zip	2014/03/21 22:39	52,1 KB
R2-141173.zip	2014/03/21 22:30	58,8 KB
R2-141174.zip	2014/03/21 23:37	43,2 KB
R2-141175.zip	2014/03/22 3:26	50,6 KB
R2-141176.zip	2014/03/21 15:09	14,9 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141179.zip	2014/03/21 15:05	22,3 KB
R2-141180.zip	2014/03/21 15:14	13,5 KB
R2-141181.zip	2014/03/21 15:11	33,9 KB
R2-141182.zip	2014/03/21 15:10	9,8 KB
R2-141183.zip	2014/03/22 5:18	90,2 KB
R2-141184.zip	2014/03/21 22:32	46 KB
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R2-141193.zip	2014/03/22 6:12	30,5 KB
R2-141194.zip	2014/03/22 6:15	65,8 KB
R2-141195.zip	2014/03/22 6:17	42,2 KB
R2-141196.zip	2014/03/22 6:19	19,6 KB
R2-141197.zip	2014/03/22 6:20	118 KB
R2-141198.zip	2014/03/22 6:23	114,5 KB
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R2-141202.zip	2014/03/22 4:17	45,9 KB
R2-141203.zip	2014/03/22 5:27	114,8 KB
R2-141204.zip	2014/03/22 6:15	106,3 KB
R2-141205.zip	2014/03/22 6:22	77,6 KB
R2-141206.zip	2014/03/22 6:31	44,7 KB
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R2-141211.zip	2014/03/22 4:43	42,6 KB

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R2-141218.zip	2014/03/21 22:23	26,5 KB
R2-141219.zip	2014/03/21 22:25	56,6 KB
R2-141220.zip	2014/03/21 13:49	100,9 KB
R2-141221.zip	2014/03/21 23:10	79,9 KB
R2-141222.zip	2014/03/21 23:05	12,9 KB
R2-141223.zip	2014/03/22 6:35	268,1 KB
R2-141225.zip	2014/03/22 6:38	93,3 KB
R2-141226.zip	2014/03/22 3:23	50,2 KB
R2-141227.zip	2014/03/21 23:33	149 KB
R2-141228.zip	2014/03/21 22:45	34,4 KB
R2-141229.zip	2014/03/22 6:42	148,7 KB
R2-141230.zip	2014/03/21 15:12	27,9 KB
R2-141231.zip	2014/03/22 4:49	92,1 KB
R2-141232.zip	2014/03/22 4:53	24,4 KB
R2-141233.zip	2014/03/22 4:56	63,6 KB
R2-141234.zip	2014/03/21 16:33	28,9 KB
R2-141235.zip	2014/03/20 13:15	26,7 KB
R2-141236.zip	2014/03/22 6:38	50,2 KB
R2-141238.zip	2014/03/21 14:35	191,6 KB
R2-141239.zip	2014/03/21 16:17	25,1 KB
R2-141240.zip	2014/03/21 16:20	22,9 KB
R2-141241.zip	2014/03/21 9:32	65,1 KB
R2-141242.zip	2014/03/21 15:32	48,6 KB
R2-141243.zip	2014/03/21 9:30	28,3 KB
R2-141244.zip	2014/03/21 15:15	36,5 KB
R2-141245.zip	2014/03/21 15:18	54,9 KB
R2-141246.zip	2014/03/20 12:26	101,7 KB
R2-141247.zip	2014/03/21 16:15	8,6 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141251.zip	2014/03/21 16:31	23,7 KB
R2-141252.zip	2014/03/22 6:46	16,5 KB
R2-141253.zip	2014/03/22 6:48	47,6 KB
R2-141254.zip	2014/03/21 21:17	12,2 KB
R2-141255.zip	2014/03/21 21:19	9,7 KB
R2-141256.zip	2014/03/22 5:36	175,6 KB
R2-141257.zip	2014/03/21 21:22	7,4 KB
R2-141258.zip	2014/03/22 5:39	61,5 KB
R2-141259.zip	2014/03/22 5:42	94,1 KB
R2-141260.zip	2014/03/21 12:26	51,9 KB
R2-141261.zip	2014/03/22 5:45	285,7 KB
R2-141262.zip	2014/03/22 5:50	215,5 KB
R2-141263.zip	2014/03/22 5:53	14 KB
R2-141264.zip	2014/03/21 16:38	219,6 KB
R2-141265.zip	2014/03/21 16:41	361 KB
R2-141266.zip	2014/03/21 20:32	24,4 KB
R2-141267.zip	2014/03/21 20:34	36,2 KB
R2-141268.zip	2014/03/21 20:36	42,5 KB
R2-141269.zip	2014/03/22 6:32	21,9 KB
R2-141270.zip	2014/03/21 23:14	12,1 KB
R2-141271.zip	2014/03/22 6:36	41,6 KB
R2-141272.zip	2014/03/22 6:41	20,5 KB
R2-141273.zip	2014/03/22 6:46	17,2 KB
R2-141274.zip	2014/03/22 6:51	23,7 KB
R2-141275.zip	2014/03/22 6:54	31,1 KB
R2-141276.zip	2014/03/22 6:57	18,6 KB
R2-141277.zip	2014/03/22 6:27	149,2 KB
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sort by name/desc	sort by date/desc	sort by size/desc
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R2-141289.zip	2014/03/22 4:24	103,6 KB
R2-141290.zip	2014/03/22 4:30	68 KB
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R2-141292.zip	2014/03/21 21:47	21,6 KB
R2-141293.zip	2014/03/21 21:56	24,9 KB
R2-141294.zip	2014/03/21 21:55	52,4 KB
R2-141295.zip	2014/03/21 21:54	20,9 KB
R2-141296.zip	2014/03/21 21:53	25,7 KB
R2-141297.zip	2014/03/21 21:52	18,8 KB
R2-141298.zip	2014/03/21 21:51	19,1 KB
R2-141299.zip	2014/03/21 21:50	30,4 KB
R2-141300.zip	2014/03/21 21:49	40,8 KB
R2-141301.zip	2014/03/21 21:48	126,5 KB
R2-141302.zip	2014/03/21 21:57	37,9 KB
R2-141304.zip	2014/03/21 18:26	21,5 KB
R2-141305.zip	2014/03/22 6:38	19,2 KB
R2-141306.zip	2014/03/21 18:11	25,2 KB
R2-141307.zip	2014/03/21 18:02	11,4 KB
R2-141308.zip	2014/03/21 18:13	47,6 KB
R2-141309.zip	2014/03/21 18:15	49,1 KB
R2-141310.zip	2014/03/21 18:05	18,4 KB
R2-141311.zip	2014/03/21 18:18	19,3 KB
R2-141312.zip	2014/03/21 18:21	26,3 KB
R2-141313.zip	2014/03/21 18:08	49,7 KB
R2-141314.zip	2014/03/21 18:11	166,7 KB
R2-141315.zip	2014/03/21 18:14	78,9 KB
R2-141316.zip	2014/03/21 18:17	16,3 KB
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sort by name/desc	sort by date/desc	sort by size/desc
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R2-141321.zip	2014/03/21 1:21	87,5 KB
R2-141322.zip	2014/03/21 1:23	20,6 KB
R2-141323.zip	2014/03/21 2:21	22,2 KB
R2-141324.zip	2014/03/21 1:50	51,5 KB
R2-141325.zip	2014/03/21 2:22	79,1 KB
R2-141326.zip	2014/03/21 7:10	282 KB
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R2-141328.zip	2014/03/21 16:35	91,4 KB
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R2-141332.zip	2014/03/21 16:37	51,4 KB
R2-141333.zip	2014/03/21 2:09	31 KB
R2-141334.zip	2014/03/21 7:07	37,8 KB
R2-141335.zip	2014/03/21 2:17	20,7 KB
R2-141336.zip	2014/03/21 2:18	22,1 KB
R2-141337.zip	2014/03/21 2:19	12,8 KB
R2-141338.zip	2014/03/21 2:37	243,1 KB
R2-141339.zip	2014/03/21 2:20	15,3 KB
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R2-141341.zip	2014/03/21 7:35	46,1 KB
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R2-141346.zip	2014/03/21 9:27	22,2 KB
R2-141347.zip	2014/03/21 9:04	150,7 KB
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R2-141351.zip	2014/03/21 19:40	44,7 KB
R2-141352.zip	2014/03/21 9:52	44,5 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141356.zip	2014/03/22 6:36	22,4 KB
R2-141357.zip	2014/03/21 14:53	18,1 KB
R2-141358.zip	2014/03/21 14:56	19,6 KB
R2-141359.zip	2014/03/21 14:58	18,7 KB
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R2-141361.zip	2014/03/21 15:02	19,8 KB
R2-141362.zip	2014/03/22 2:01	34,9 KB
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R2-141367.zip	2014/03/21 9:23	25,3 KB
R2-141368.zip	2014/03/21 9:19	41,4 KB
R2-141369.zip	2014/03/21 8:51	21,1 KB
R2-141370.zip	2014/03/21 8:53	20,3 KB
R2-141371.zip	2014/03/21 9:17	40,1 KB
R2-141372.zip	2014/03/21 8:56	17,5 KB
R2-141373.zip	2014/03/22 5:07	9,2 KB
R2-141375.zip	2014/03/22 5:10	14,6 KB
R2-141376.zip	2014/03/22 5:13	13,2 KB
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R2-141380.zip	2014/03/22 3:00	23,3 KB
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R2-141404.zip	2014/03/22 0:20	35,1 KB
R2-141405.zip	2014/03/22 0:34	244 KB
R2-141406.zip	2014/03/22 0:21	29,9 KB
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R2-141414.zip	2014/03/21 16:37	23,4 KB
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R2-141421.zip	2014/03/22 3:13	13,2 KB
R2-141422.zip	2014/03/22 3:14	17,3 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141426.zip	2014/03/21 16:50	29,1 KB
R2-141427.zip	2014/03/22 3:20	41,6 KB
R2-141428.zip	2014/03/21 8:58	36,9 KB
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R2-141430.zip	2014/03/22 3:21	19,5 KB
R2-141431.zip	2014/03/21 9:17	21,3 KB
R2-141432.zip	2014/03/21 19:30	153,9 KB
R2-141433.zip	2014/03/21 19:34	466 KB
R2-141434.zip	2014/03/22 3:47	23,6 KB
R2-141435.zip	2014/03/21 9:09	31,7 KB
R2-141436.zip	2014/03/22 2:17	369,6 KB
R2-141437.zip	2014/03/22 4:33	86,2 KB
R2-141438.zip	2014/03/21 16:53	22,1 KB
R2-141439.zip	2014/03/22 6:56	33 KB
R2-141440.zip	2014/03/21 8:55	19,7 KB
R2-141441.zip	2014/03/21 9:31	20,6 KB
R2-141442.zip	2014/03/22 3:43	19,5 KB
R2-141443.zip	2014/03/21 17:00	42,2 KB
R2-141444.zip	2014/03/21 8:47	31,1 KB
R2-141445.zip	2014/03/21 8:48	55,4 KB
R2-141446.zip	2014/03/21 17:05	34,6 KB
R2-141447.zip	2014/03/21 17:01	41,9 KB
R2-141448.zip	2014/03/21 16:59	465,4 KB
R2-141449.zip	2014/03/21 17:15	35,6 KB
R2-141450.zip	2014/03/21 17:14	18,1 KB
R2-141451.zip	2014/03/21 17:22	39,2 KB
R2-141453.zip	2014/03/21 8:44	16,7 KB
R2-141454.zip	2014/03/22 3:10	32,4 KB
R2-141455.zip	2014/03/22 5:29	32,7 KB
R2-141456.zip	2014/03/21 17:12	60,4 KB
R2-141457.zip	2014/03/22 6:05	34,9 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141461.zip	2014/03/21 17:17	48,7 KB
R2-141462.zip	2014/03/21 9:08	16,5 KB
R2-141463.zip	2014/03/21 17:18	21,1 KB
R2-141464.zip	2014/03/21 15:46	53,5 KB
R2-141465.zip	2014/03/22 7:07	218,9 KB
R2-141466.zip	2014/03/21 8:53	40,3 KB
R2-141467.zip	2014/03/21 14:59	339,8 KB
R2-141468.zip	2014/03/22 5:50	17,3 KB
R2-141469.zip	2014/03/21 14:00	1741,6 KB
R2-141470.zip	2014/03/22 7:12	1177,7 KB
R2-141471.zip	2014/03/22 5:52	17,3 KB
R2-141472.zip	2014/03/21 13:58	19 KB
R2-141473.zip	2014/03/22 1:55	138,2 KB
R2-141474.zip	2014/03/21 15:23	26,5 KB
R2-141475.zip	2014/03/21 9:27	35 KB
R2-141476.zip	2014/03/22 5:54	16,1 KB
R2-141477.zip	2014/03/21 23:30	50,8 KB
R2-141478.zip	2014/03/21 9:23	421,2 KB
R2-141479.zip	2014/03/21 23:32	120,6 KB
R2-141480.zip	2014/03/21 23:35	129,8 KB
R2-141481.zip	2014/03/21 14:19	16,3 KB
R2-141482.zip	2014/03/21 9:31	32,8 KB
R2-141483.zip	2014/03/22 1:36	824,9 KB
R2-141484.zip	2014/03/22 6:09	21,2 KB
R2-141485.zip	2014/03/22 0:55	13,6 KB
R2-141486.zip	2014/03/22 1:49	379,3 KB
R2-141487.zip	2014/03/21 9:36	170,5 KB
R2-141488.zip	2014/03/22 6:11	25,8 KB
R2-141489.zip	2014/03/21 15:52	24,2 KB
R2-141490.zip	2014/03/22 0:59	33 KB
R2-141491.zip	2014/03/22 1:54	129,3 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141493.zip	2014/03/22 1:57	59,1 KB
R2-141494.zip	2014/03/21 19:46	27,3 KB
R2-141495.zip	2014/03/21 19:31	27,3 KB
R2-141496.zip	2014/03/22 2:36	200 KB
R2-141497.zip	2014/03/22 1:52	98,3 KB
R2-141498.zip	2014/03/22 5:56	19,1 KB
R2-141499.zip	2014/03/22 1:10	72,4 KB
R2-141500.zip	2014/03/22 1:50	29,8 KB
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R2-141502.zip	2014/03/22 1:48	150,9 KB
R2-141503.zip	2014/03/22 1:46	141,8 KB
R2-141504.zip	2014/03/22 1:40	29,6 KB
R2-141505.zip	2014/03/22 1:38	12,5 KB
R2-141506.zip	2014/03/22 3:14	94,6 KB
R2-141507.zip	2014/03/22 1:36	13,2 KB
R2-141509.zip	2014/03/22 1:33	11,7 KB
R2-141510.zip	2014/03/22 1:31	46 KB
R2-141511.zip	2014/03/22 1:26	15,3 KB
R2-141512.zip	2014/03/22 5:58	298,3 KB
R2-141513.zip	2014/03/21 17:05	52,6 KB
R2-141514.zip	2014/03/22 6:01	99 KB
R2-141515.zip	2014/03/22 1:29	94,4 KB
R2-141516.zip	2014/03/21 16:24	21,2 KB
R2-141517.zip	2014/03/21 10:20	15,5 KB
R2-141518.zip	2014/03/21 10:23	15,7 KB
R2-141519.zip	2014/03/22 6:02	65,2 KB
R2-141520.zip	2014/03/22 1:02	29,9 KB
R2-141521.zip	2014/03/21 13:54	154,8 KB
R2-141522.zip	2014/03/22 6:06	107 KB
R2-141523.zip	2014/03/22 1:08	56,6 KB
R2-141525.zip	2014/03/21 10:55	30,6 KB
R2-141526.zip	2014/03/21 23:22	24,7 KB
R2-141527.zip	2014/03/21 11:10	64,4 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141529.zip	2014/03/21 23:28	22,1 KB
R2-141530.zip	2014/03/22 7:01	77,1 KB
R2-141531.zip	2014/03/21 23:47	21,7 KB
R2-141532.zip	2014/03/21 19:30	30,6 KB
R2-141533.zip	2014/03/21 23:42	24,4 KB
R2-141534.zip	2014/03/21 19:21	101 KB
R2-141535.zip	2014/03/21 17:53	24 KB
R2-141536.zip	2014/03/21 16:16	45 KB
R2-141537.zip	2014/03/22 6:57	146,5 KB
R2-141538.zip	2014/03/21 16:08	31 KB
R2-141540.zip	2014/03/21 11:49	39 KB
R2-141541.zip	2014/03/22 7:04	18,7 KB
R2-141542.zip	2014/03/21 23:50	69,4 KB
R2-141543.zip	2014/03/21 11:55	31,3 KB
R2-141544.zip	2014/03/21 23:48	116,3 KB
R2-141545.zip	2014/03/21 23:59	59,3 KB
R2-141546.zip	2014/03/21 12:01	30,4 KB
R2-141547.zip	2014/03/21 23:31	38,3 KB
R2-141549.zip	2014/03/21 12:06	31,2 KB
R2-141550.zip	2014/03/21 23:29	629 KB
R2-141551.zip	2014/03/21 16:28	88,9 KB
R2-141552.zip	2014/03/21 12:10	79,9 KB
R2-141553.zip	2014/03/21 23:37	39 KB
R2-141554.zip	2014/03/21 23:39	66,6 KB
R2-141555.zip	2014/03/21 16:31	36 KB
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R2-141557.zip	2014/03/21 15:14	86,4 KB
R2-141558.zip	2014/03/21 12:18	78 KB
R2-141559.zip	2014/03/21 14:58	92,2 KB
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R2-141562.zip	2014/03/21 14:45	74,8 KB
R2-141563.zip	2014/03/21 12:21	31,7 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141565.zip	2014/03/21 12:51	12,7 KB
R2-141567.zip	2014/03/21 12:31	40,6 KB
R2-141568.zip	2014/03/21 16:35	42,6 KB
R2-141570.zip	2014/03/21 12:34	31,8 KB
R2-141571.zip	2014/03/21 14:34	20,5 KB
R2-141572.zip	2014/03/21 12:35	88,5 KB
R2-141573.zip	2014/03/21 16:37	31,8 KB
R2-141574.zip	2014/03/21 21:25	23,5 KB
R2-141575.zip	2014/03/22 2:37	24,1 KB
R2-141576.zip	2014/03/22 2:38	25,5 KB
R2-141577.zip	2014/03/21 12:38	31,3 KB
R2-141578.zip	2014/03/22 2:39	59,9 KB
R2-141579.zip	2014/03/21 16:42	50,2 KB
R2-141580.zip	2014/03/21 19:25	50,1 KB
R2-141581.zip	2014/03/21 16:46	41,8 KB
R2-141582.zip	2014/03/21 14:08	26,1 KB
R2-141583.zip	2014/03/21 14:51	18,2 KB
R2-141584.zip	2014/03/21 19:29	46,4 KB
R2-141585.zip	2014/03/21 16:49	43,1 KB
R2-141586.zip	2014/03/21 19:31	46,5 KB
R2-141587.zip	2014/03/21 19:27	124,8 KB
R2-141588.zip	2014/03/21 16:52	20,9 KB
R2-141589.zip	2014/03/21 16:56	22 KB
R2-141590.zip	2014/03/21 16:58	1167,6 KB
R2-141591.zip	2014/03/21 18:25	23,3 KB
R2-141592.zip	2014/03/21 17:01	26,5 KB
R2-141593.zip	2014/03/21 18:27	23,4 KB
R2-141594.zip	2014/03/21 18:32	23,3 KB
R2-141595.zip	2014/03/24 18:40	22,4 KB
R2-141596.zip	2014/03/24 18:40	22,5 KB
R2-141597.zip	2014/03/21 17:04	14,2 KB
R2-141598.zip	2014/03/21 17:05	162,9 KB
R2-141599.zip	2014/03/21 15:24	31,3 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141602.zip	2014/03/22 2:31	50,6 KB
R2-141603.zip	2014/03/21 18:22	197 KB
R2-141604.zip	2014/03/21 19:36	13,8 KB
R2-141605.zip	2014/03/22 5:22	136,5 KB
R2-141606.zip	2014/03/21 17:27	55,1 KB
R2-141607.zip	2014/03/21 19:37	16,9 KB
R2-141608.zip	2014/03/21 19:38	20,5 KB
R2-141609.zip	2014/03/21 17:29	267,4 KB
R2-141610.zip	2014/03/21 19:39	17,6 KB
R2-141611.zip	2014/03/21 19:52	136,1 KB
R2-141612.zip	2014/03/21 19:50	20,8 KB
R2-141613.zip	2014/03/21 17:12	69,4 KB
R2-141614.zip	2014/03/21 19:51	18,4 KB
R2-141615.zip	2014/03/21 15:43	45,7 KB
R2-141616.zip	2014/03/21 19:40	22,1 KB
R2-141617.zip	2014/03/22 6:52	24,9 KB
R2-141618.zip	2014/03/21 19:55	27,4 KB
R2-141619.zip	2014/03/21 17:07	7,3 KB
R2-141620.zip	2014/03/22 6:56	19,5 KB
R2-141621.zip	2014/03/21 17:15	42,4 KB
R2-141622.zip	2014/03/22 7:04	20 KB
R2-141623.zip	2014/03/21 17:17	57,4 KB
R2-141624.zip	2014/03/21 16:03	94,6 KB
R2-141625.zip	2014/03/22 7:06	29,8 KB
R2-141626.zip	2014/03/21 17:20	15,8 KB
R2-141627.zip	2014/03/22 7:18	28,8 KB
R2-141628.zip	2014/03/21 16:24	22,5 KB
R2-141629.zip	2014/03/21 18:27	39,4 KB
R2-141630.zip	2014/03/22 6:38	55,6 KB
R2-141631.zip	2014/03/22 6:31	175,3 KB
R2-141632.zip	2014/03/21 21:16	92,6 KB
R2-141633.zip	2014/03/22 5:58	142 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141635.zip	2014/03/22 3:16	18,2 KB
R2-141636.zip	2014/03/22 3:19	18,2 KB
R2-141637.zip	2014/03/22 3:21	16,9 KB
R2-141638.zip	2014/03/22 3:30	16,9 KB
R2-141639.zip	2014/03/22 1:44	95,8 KB
R2-141640.zip	2014/03/21 18:17	45,1 KB
R2-141641.zip	2014/03/22 0:49	106,5 KB
R2-141642.zip	2014/03/22 0:51	73,5 KB
R2-141643.zip	2014/03/22 0:52	54,3 KB
R2-141644.zip	2014/03/22 0:53	114,2 KB
R2-141645.zip	2014/03/21 21:36	36,4 KB
R2-141646.zip	2014/03/22 8:58	42,2 KB
R2-141647.zip	2014/03/22 8:58	41,2 KB
R2-141648.zip	2014/03/22 8:58	38,1 KB
R2-141649.zip	2014/03/22 8:58	75,2 KB
R2-141650.zip	2014/03/22 8:58	20,3 KB
R2-141651.zip	2014/03/21 23:13	30,7 KB
R2-141652.zip	2014/03/21 23:14	30,2 KB
R2-141653.zip	2014/03/21 18:34	50,7 KB
R2-141654.zip	2014/03/21 18:39	26,1 KB
R2-141655.zip	2014/03/21 18:46	35,5 KB
R2-141656.zip	2014/03/21 19:03	45,7 KB
R2-141657.zip	2014/03/21 20:02	128,9 KB
R2-141658.zip	2014/03/21 21:40	47,6 KB
R2-141659.zip	2014/03/21 21:43	58,2 KB
R2-141660.zip	2014/03/21 21:09	16,1 KB
R2-141661.zip	2014/03/21 21:32	38,5 KB
R2-141662.zip	2014/03/21 21:15	18,6 KB
R2-141663.zip	2014/03/21 20:15	378,8 KB
R2-141664.zip	2014/03/21 20:21	41,1 KB
R2-141665.zip	2014/03/21 21:18	17,2 KB
R2-141666.zip	2014/03/21 20:25	27,1 KB
R2-141667.zip	2014/03/21 21:20	16,9 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141669.zip	2014/03/21 21:28	11 KB
R2-141670.zip	2014/03/21 21:30	16,9 KB
R2-141671.zip	2014/03/21 23:08	40,6 KB
R2-141672.zip	2014/03/21 23:42	24 KB
R2-141673.zip	2014/03/22 2:40	323,1 KB
R2-141674.zip	2014/03/21 23:45	37,3 KB
R2-141675.zip	2014/03/21 23:48	21,4 KB
R2-141676.zip	2014/03/21 23:50	22,6 KB
R2-141677.zip	2014/03/21 23:13	67,9 KB
R2-141678.zip	2014/03/21 22:15	38,5 KB
R2-141679.zip	2014/03/21 23:17	101,7 KB
R2-141680.zip	2014/03/21 23:52	81,9 KB
R2-141681.zip	2014/03/21 22:54	244,3 KB
R2-141682.zip	2014/03/21 23:54	23,6 KB
R2-141683.zip	2014/03/21 23:00	69,5 KB
R2-141684.zip	2014/03/21 23:55	32,5 KB
R2-141685.zip	2014/03/21 23:04	511,4 KB
R2-141686.zip	2014/03/21 23:09	329,2 KB
R2-141687.zip	2014/03/22 0:17	33,3 KB
R2-141688.zip	2014/03/22 1:23	237,7 KB
R2-141689.zip	2014/03/22 1:19	17,8 KB
R2-141690.zip	2014/03/22 4:11	24 KB
R2-141691.zip	2014/03/22 4:14	40 KB
R2-141692.zip	2014/03/22 4:16	38,8 KB
R2-141693.zip	2014/03/22 4:19	22,4 KB
R2-141694.zip	2014/03/24 18:40	20,7 KB
R2-141695.zip	2014/03/22 3:48	392,4 KB
R2-141697.zip	2014/03/22 1:16	11,8 KB
R2-141698.zip	2014/03/22 3:52	30,7 KB
R2-141699.zip	2014/03/22 3:15	24,3 KB
R2-141700.zip	2014/03/22 3:19	23,8 KB
R2-141701.zip	2014/03/22 4:43	23,4 KB
R2-141702.zip	2014/03/22 4:45	23,2 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141704.zip	2014/03/22 3:17	24,7 KB
R2-141705.zip	2014/03/22 1:18	21,5 KB
R2-141706.zip	2014/03/22 1:54	22,4 KB
R2-141707.zip	2014/03/22 5:58	341,6 KB
R2-141708.zip	2014/03/22 6:02	54,6 KB
R2-141709.zip	2014/03/22 5:36	64,9 KB
R2-141710.zip	2014/03/22 5:07	65,6 KB
R2-141711.zip	2014/03/22 5:10	63,7 KB
R2-141712.zip	2014/03/22 5:13	110,3 KB
R2-141713.zip	2014/03/22 7:05	1360,5 KB
R2-141714.zip	2014/03/22 5:39	129,9 KB
R2-141715.zip	2014/03/22 5:38	29,1 KB
R2-141716.zip	2014/03/22 5:37	418,3 KB
R2-141717.zip	2014/03/22 5:41	30,9 KB
R2-141718.zip	2014/03/22 5:42	113,1 KB
R2-141719.zip	2014/03/22 5:44	26,7 KB
R2-141720.zip	2014/03/22 5:09	38,5 KB
R2-141721.zip	2014/03/22 5:57	657,4 KB
R2-141722.zip	2014/03/22 5:45	28,6 KB
R2-141723.zip	2014/03/22 5:46	141,5 KB
R2-141724.zip	2014/03/22 6:34	13,8 KB
R2-141725.zip	2014/03/22 6:16	29,3 KB
R2-141726.zip	2014/03/22 6:22	26,7 KB
R2-141727.zip	2014/03/22 6:39	17,9 KB
R2-141728.zip	2014/03/22 6:44	18,3 KB
R2-141729.zip	2014/03/22 5:15	69,9 KB
R2-141730.zip	2014/03/22 6:48	17,7 KB
R2-141731.zip	2014/03/22 6:55	21,8 KB
R2-141732.zip	2014/03/22 6:20	52,9 KB
R2-141733.zip	2014/03/22 6:22	278 KB
R2-141734.zip	2014/03/22 6:05	54,7 KB
R2-141735.zip	2014/03/22 6:09	54,4 KB
R2-141736.zip	2014/03/22 6:19	120,2 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141741.zip	2014/03/22 6:21	33,4 KB
R2-141742.zip	2014/03/22 7:00	31,2 KB
R2-141743.zip	2014/03/22 7:03	31,9 KB
R2-141744.zip	2014/03/22 6:55	56,5 KB
R2-141745.zip	2014/03/22 6:56	22,5 KB
R2-141746.zip	2014/03/22 7:09	121,1 KB
R2-141747.zip	2014/03/22 7:27	29,7 KB
R2-141748.zip	2014/03/26 16:40	57,4 KB
R2-141749.zip	2014/03/26 16:40	32,9 KB
R2-141750.zip	2014/03/28 16:13	12,5 KB
R2-141751.zip	2014/03/28 12:42	26,4 KB
R2-141752.zip	2014/03/28 16:13	24,7 KB
R2-141753.zip	2014/03/28 12:42	31,5 KB
R2-141754.zip	2014/03/28 12:42	30,5 KB
R2-141755.zip	2014/03/31 16:48	20,5 KB
R2-141756.zip	2014/03/31 16:48	21,5 KB
R2-141757.zip	2014/03/31 16:48	39,1 KB
R2-141758.zip	2014/03/31 16:48	61,5 KB
R2-141759.zip	2014/04/01 8:38	63,7 KB
R2-141760.zip	2014/03/31 16:48	116,5 KB
R2-141761.zip	2014/03/31 16:48	13,2 KB
R2-141762.zip	2014/04/04 9:18	11,7 KB
R2-141763.zip	2014/04/02 19:19	12,2 KB
R2-141764.zip	2014/04/04 15:43	97,5 KB
R2-141765.zip	2014/04/04 15:43	68,5 KB
R2-141766.zip	2014/04/02 19:19	21,2 KB
R2-141767.zip	2014/04/02 19:19	18,6 KB
R2-141768.zip	2014/04/02 19:19	19,5 KB
R2-141769.zip	2014/04/02 19:19	19,5 KB
R2-141770.zip	2014/04/03 12:36	25,8 KB
R2-141771.zip	2014/04/03 12:36	35,1 KB
R2-141772.zip	2014/04/03 12:36	199,6 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141774.zip	2014/04/04 9:18	39,5 KB
R2-141775.zip	2014/04/03 12:36	124,6 KB
R2-141776.zip	2014/04/03 12:36	30,4 KB
R2-141777.zip	2014/04/03 12:36	13,7 KB
R2-141778.zip	2014/04/04 9:18	18,2 KB
R2-141779.zip	2014/04/04 9:18	18,3 KB
R2-141780.zip	2014/04/04 9:18	12 KB
R2-141781.zip	2014/04/04 9:18	20,5 KB
R2-141782.zip	2014/04/04 9:18	23,4 KB
R2-141783.zip	2014/04/04 9:18	11,9 KB
R2-141784.zip	2014/04/04 10:52	12,8 KB
R2-141785.zip	2014/04/04 9:18	12 KB
R2-141786.zip	2014/04/04 9:18	20,4 KB
R2-141787.zip	2014/04/04 15:43	18,1 KB
R2-141788.zip	2014/04/04 10:52	18,6 KB
R2-141789.zip	2014/04/04 15:43	18,4 KB
R2-141790.zip	2014/04/11 14:03	14,8 KB
R2-141800.zip	2014/04/04 9:18	162,4 KB
R2-141801.zip	2014/04/04 10:52	48 KB
R2-141802.zip	2014/04/04 10:52	16,3 KB
R2-141803.zip	2014/04/04 9:18	10,2 KB
R2-141814.zip	2014/04/04 15:43	887,1 KB
R2-141815.zip	2014/04/02 19:19	19,5 KB
R2-141816.zip	2014/04/04 9:18	137,2 KB
R2-141817.zip	2014/04/04 9:18	137,2 KB
R2-141818.zip	2014/04/04 9:18	16,6 KB
R2-141819.zip	2014/04/04 10:52	20,3 KB
R2-141820.zip	2014/04/02 7:47	30,6 KB
R2-141821.zip	2014/04/04 9:18	12,3 KB
R2-141822.zip	2014/04/02 19:19	12,5 KB
R2-141823.zip	2014/04/04 9:18	11,9 KB
R2-141824.zip	2014/04/04 15:43	61,7 KB
R2-141825.zip	2014/04/02 19:19	12,2 KB

sort by name/desc	sort by date/desc	sort by size/desc
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R2-141827.zip	2014/04/03 12:36	15,6 KB
R2-141828.zip	2014/04/04 10:52	18,9 KB
R2-141829.zip	2014/04/04 9:18	10,4 KB
R2-141830.zip	2014/04/03 12:36	12,6 KB
R2-141831.zip	2014/04/03 12:36	10,2 KB
R2-141832.zip	2014/04/04 9:18	10,2 KB
R2-141833.zip	2014/04/03 12:36	10,9 KB
R2-141834.zip	2014/04/03 12:37	14,2 KB
R2-141835.zip	2014/04/04 9:18	11,3 KB
R2-141836.zip	2014/04/11 14:48	8,7 KB
R2-141837.zip	2014/04/04 9:18	13,8 KB
R2-141838.zip	2014/04/04 15:43	382,2 KB
R2-141839.zip	2014/04/04 9:18	31,1 KB
R2-141840.zip	2014/04/04 9:18	11,3 KB
R2-141841.zip	2014/04/04 9:18	125 KB
R2-141842.zip	2014/04/04 15:43	10 KB
R2-141844.zip	2014/04/11 14:03	12,1 KB
R2-141845.zip	2014/04/04 9:18	12,6 KB
R2-141846.zip	2014/04/04 15:43	22,6 KB
R2-141847.zip	2014/04/04 15:43	26,8 KB
R2-141848.zip	2014/04/04 15:43	10,5 KB
R2-141849.zip	2014/04/04 15:43	11,2 KB
R2-141850.zip	2014/04/04 15:43	10,4 KB
R2-141851.zip	2014/04/04 15:43	9,4 KB
R2-141852.zip	2014/04/04 15:43	11,9 KB
R2-141853.zip	2014/04/04 15:43	11,5 KB
R2-141854.zip	2014/04/04 15:43	507,6 KB
R2-141855.zip	2014/04/04 15:43	9,8 KB
R2-141856.zip	2014/04/04 15:43	26,8 KB
R2-141857.zip	2014/04/14 14:33	1280,8 KB
R2-141858.zip	2014/04/11 14:59	16,7 KB
R2-141859.zip	2014/04/11 16:29	321,1 KB
R2-141860.zip	2014/04/14 17:33	371,9 KB

sort by name/desc	sort by date/desc	sort by size/desc
R2-141861.zip	2014/04/14 17:33	114,4 KB
TDoc_List_Meeting_RAN2#85-BIS.xlsm	2016/05/31 20:31	140,8 KB
TDoc_List_Meeting_RAN2#85-BIS.xlsx	2017/11/07 23:57	163,2 KB
TDoc_List_Meeting_RAN2#85-BIS.zip	2018/01/10 16:47	208,3 KB

782 items.

Appendix 26

Agenda Item: 2.2

Source: ETSI MCC

Title: Report of 3GPP TSG RAN WG2 meeting #85bis,
Valencia, Spain, March 31 – April 4, 2014

Document for: Approval

Report of 3GPP TSG RAN WG2 meeting #85bis

held in Valencia, Spain
March 31 - April 4, 2014



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Organisation of the meeting

Meeting:	3GPP TSG RAN WG2 #85bis		
Meeting location:	Valencia, Spain		
Duration:	Monday 31.03.2014 - Friday 04.04.2014		
Host:	European Friends of 3GPP (EF3)		
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:	Joern Krause (ETSI MCC)	email: joern.krause@etsi.org	
	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_85bis/Docs		
Ad hocs:	Official parallel ad hocs held (see agenda item 2.1) on		
	UTRA session (see AI 8-10, Tue - Fri noon): chaired by Diana Pani		
	LTE UP session (see AI 6.1.2, 6.2.2, 7.6.3, 7.10.2 on Tue morning, AI 7.1.4 on Wed morning) chaired by SeungJune Yi		
next meetings:	TSG RAN WG2 #86,	19.05. - 23.05.2014	Seoul, Korea
	TSG RAN #64	10.06. - 13.06.2014	Sophia Antipolis, France
	TSG RAN WG2 #87	18.08. - 22.08.2014	Dresden, Germany
	TSG RAN #65	09.09. - 12.09.2014	Edinburgh, Scotland

Statistics/Executive Summary

TSG RAN WG2 #85bis was held in Valencia, Spain, hosted by the European Friends of 3GPP (note: No other 3GPP WGs were co-located). This RAN WG2 meeting had 2 parallel sessions: UTRA session (see agenda items 8-10; Tue - Fri noon) and LTE UP session (see AI 6.1.2, 6.2.2, 7.6.3, 7.10.2 on Tue morning, AI 7.1.4 on Wed morning or Annex G). All other topics were treated in the parallel main session.

- 164 participants (registered before the meeting: 183 participants).
- 822 Tdocs allocated with 779 available contributions.
- 36 incoming liaison statements (5 on UTRA, 26 on LTE; and 5 on joint aspects): all of them were treated.
- 18 outgoing liaison statements (5 on UTRA, 9 on LTE; and 4 on joint aspects), 3 of them agreed by email.
- 23 email discussions scheduled after RAN2 #85bis (see Annex F).
- REL-12 WI Study on WLAN/3GPP Radio Interworking (AI 5.1):
  Some agreements on RAN assistance parameters and rules but further email discussions [85bis#10][Joint/WiFi] on stage-2 detail of WiFi interworking for UMTS and [85bis#11][Joint/WiFi] on idle mode procedure for LTE were scheduled until RAN2 #86.
- REL-12 WI Study on RAN enhancements for MTC and other applications (AI 5.2):
  Discussion on the introduction of Power Saving Mode in RAN specification was postponed and further email discussion [85bis#12][Joint/UEPCOP] on running stage-3 CRs was scheduled until RAN2 #86.
- REL-12 WI Study on Dual Connectivity for LTE (AI 7.2):
  Reply LS to SA3 on security aspects of protocol architectures for small cell enhancements was agreed in R2-141844 by email discussion [85bis#00][LTE/DC]. In addition running stage-2 CR has been endorsed in R2-141857 by email discussion [85bis#01][LTE/DC] and further email discussions [85bis#14][LTE/DC] on merging RAN3 input to RAN2 stage-2 CRs and [85bis#15][LTE/DC] on SCG RRM were scheduled until RAN2 #86.
- REL-12 WI Study on Further MBMS Operations Support for E-UTRA (AI 7.3):
  Some agreements on issues of MBMS MDT but further email discussion [85bis#16 & 17][LTE/MBMS-MDT] were sceduled until RAN2 #86 on eMBMS measurements.
- REL-12 RAN1 WI Study on LTE Device to Device Proximity Services –Radio aspects (AI 7.4):
  Agreements of RAN2#85bis were captured in a running 36.300 CR on introduction of Prose which was endorsed in R2-141859 by email discussion [85bis#02][LTE/D2D] and further email discussions on [85bis#18][LTE/D2D] on user plane aspects &[85bis#19][LTE/D2D] on resource allocation details were scheduled until RAN2 #86. Furthermore, reply LS to RAN1 on identifier in scheduling assignments for D2D Communication was agreed in R2-141836 by email discussion [85bis#03][LTE/D2D].

- REL-12 WI Study on Smart Congestion Mitigation in E-UTRAN (AI 7.5):
  One incoming LS from CT1 on MMTEL and SMS priorization was noted.
- REL-12 RAN1 WI study on TDD Interference Management and Traffic Adaptation (eIMTA) (AI 7.6):
  Email discussions [85bis#20][LTE/eIMTA] on introducing eIMTA in 36.331, [85bis#21][LTE/eIMTA] on SPS and [85bis#22][LTE/eIMTA] on MAC aspects were scheduled until RAN2 #86.
- REL-12 RAN1 WI Core part: Low cost & enhanced coverage MTC UE for LTE (AI 7.7):
  RAN2 discussed and agreed several aspects related to capability handling. Running 36.300 CR on Stage 2 aspects of low complexity MTC UE features was endorsed in R2-141858 by email discussion [85bis#04][LTE/MTC-LC].
- REL-12 WI Study on Further EUL Enhancements (AI 10.1):
  RAN2 agreed several aspects related to Improvements on Access Control and Improvements to EUL coverage by fast TTI switching.
- REL-12 WI Core part: UMTS Mobility enhancements for Heterogeneous Networks (AI 10.2):
  RAN2 noted several Tdocs and agreed some aspects related to Small cell discovery. Furthermore, email discussions [85bis#24][UMTS/Het-Net-Mob] on new inter-frequency event and [85bis#25][UMTS/Het-Net-Mob] on enhanced Serving cell change were scheduled until RAN2 #86.Among 28 change requests (CRs) in total: 186 CRs (68 CRs for UTRA 25.xxx specs, 118 CRs for LTE 36.xxx specs, 0 CRs for joint 37.xxx specs) were agreed in principle (8 of the 6 implicitly). They will be (re)submitted to RAN2 #86 for final agreement.

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.

1 Opening of the meeting

TSG RAN WG2 chairman Henning Wiemann (Ericsson) opened the meeting RAN WG2 #85bis on Monday morning 31.03.2014 at 09:00 o'clock.

On behalf of the host, the European Friends of 3GPP (EF3), Dr. Jose Luis Pradas (Ericsson) welcomed the delegates to Valencia, Spain and explained organisational issues.

RAN WG2 meeting rooms in the Sercotel Sorolla Palace Hotel:

Main RAN2 room:	Recati A (E Floor),	planned for 210 chairs, Mon-Fri
RAN2 LTE UP ad hoc room:	Recati B (E Floor),	planned for 80 participants, Tue - Thu
RAN2 UTRA ad hoc room:	Perellonet & Las arenas (2nd Floor),	planned for 40 participants, Tue-Fri noon

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 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 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)**

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

R2-141040 Proposed agenda for RAN2 #85bis, Valencia, Spain, 31.03.-04.04.2014; 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 -> 12:30	[2],[3],[4]		
Mon 14:00 ->	[5.4] Other Joint Rel-12 [5.2] MTC UEPCOP [5.3] Min. nr of carriers for monitoring [5.1] WLAN/3GPP [5.5] TEI12 Joint		
Tue 08:30 -> 16:00	[6.1.1] LTE Rel-8/9/10 **CP** [6.2.1] Rel-11 **CP**	[6.1.2] LTE Rel-8/9/10 (UP) [6.2.2] Rel-11 (UP) [7.6.3] eIMTA (UP) [7.10.2] TEI12 LTE (UP)	[8] UMTS Rel-8/9/10 [9] UMTS Rel-11
Tue 14:00 -> 16:00	[7.1.1/2] Dual Connectivity		
Tue 16:00 ->			[10.2] Het-Net Mobility
Wed 08:30 -> 12:30	[7.7] MTC Low Cost [7.3] MBMS MDT [7.2] SCE-L1	[7.1.4] Dual Connectivity (UP)	[10.4] SIB enhancements
Wed 14:00 ->	[7.6.1/2] eIMTA [7.4] D2D		[10.1] FEUL
Thu 8:30 -> 12:30	[7.1.2/3/5] Dual Connectivity		[10.5] RAN1 Het-Net WI
			[10.6] DCH enhancements
Thu 14:00 -> 16:00	[7.4] D2D (cont.)		Comebacks [10.3], [10.7], [10.8]
Thu 16:30 ->	[7.8] FDD/TDD CA [7.10.1] TEI12 LTE (CP)		
Fri 8:30 ->	Left-overs, Comebacks		Comebacks and leftovers
Fri: 14:00 -> until 17:00	Left-overs, Comebacks (Joint topics), [12][13][14]		

Offline sessions

The intention is to stop the official LTE CP, UP and UMTS meetings on Tuesday and Wednesday no later than 19:00. If needed, this will allow offline discussions.

2.2 Approval of the report of the previous meeting

R2-141041 Draft report of RAN2 #85, Prague, Czech Republic, 10.02.-14.02.2014; ETSI MCC; Report; late
=> revised in R2-141814

R2-141814 Draft report of RAN2 #85, Prague, Czech Republic, 10.02.-14.02.2014; ETSI MCC; Report;
=> agreed in R2-141854

2.3 Reporting from other meetings

2.3.1 RAN-63 (Fukuoka)

Legacy Releases

- The RAN2 CRs (RP-140364) introducing **new UE categories for DL data rates up to 450 MBps** were approved.
- RAN plenary sent an LS to RAN5 to verify whether test cases for the MFBI functionality covered by **FGI31 (MFBI in LTE)** exist. RAN established the view that sufficient IOT opportunity is available and will decide in June or September whether to mandate setting of the FGI bit for terminals of Rel-10 onwards.

Rel-12 Work- and Study Items

- The RAN2 and RAN4 parts of the **Het-Net Mobility WI** were closed. However the WI was kept open with a small time allocation in RAN3 where they may discuss the context fetch.
- Study Items on *Smart Congestion Mitigation* and Group Communication (GCSE) were closed.
- A RAN2-led **WI on Smart Congestion Mitigation was approved** (RP-140103) for Rel-12 which we will start working on in May (hopefully with input from CT1)
- A **RAN2-led GCSE WI was** proposed (WID: RP-140238) but **not approved**. However, it was agreed (see RP-140512) that RAN2 may discuss means for ensuring forward compatibility for possible future enhancements in TEI12.
- The RAN1-led work item on **D2D Communication and Discovery** was approved in RP-140518.
- The RAN1-led work item on **Network-Assisted Interference Cancellation** (NAICS) was approved in RP-140519.
- The **coverage enhancements were excluded** from the scope of the Rel-12 WI on “MTC Low Cost and Coverage Enhancements” but with the intention to continue it in Rel-13.
- The resulting **time budget overview** was endorsed in RP-140500.

Capability Handling in Rel-12

- RAN agreed that the Rel-12 Capability Handling should follow the procedure established in Rel-11: **WGs are tasked to identify for each feature whether the network needs to know the UE support**. For the features which the network needs to know the UE support, WGs develop the UE capability signalling. The need of FDD/TDD differentiation is determined feature by feature. **RAN1 needs to communicate to RAN2 timely** any foreseen impact on RAN2 defined signalling.

- Mandatory/optional support of the features by the UE can be discussed in WGs and decided by WGs only if it is not contentious and doesn't cause too much waste of time. Otherwise, RAN plenary will attempt to reach a conclusion.

2.3.2 SA-63 (Fukuoka)

(provided by the RAN chairman)

3GPP/WLAN radio interworking

Following the joint session on the subject, SA agreed the SA2 WID in SP-140169 to capture the objectives of SA2 for this task. An exception sheet was also approved in SP-140172 (given that SA2 is past their stage-2 deadline). See also the time management document provided by the SA2 chairman in SP-140164.

Dual Connectivity

No notable discussion. There were no comments to the incoming LSs from SA2, SA3, RAN2 and RAN3. SA2 was tasked to complete the corresponding parts in the next quarter.

Release schedule

In line with RAN's earlier decision, **SA agreed to move by one quarter the Rel-12 deadline to Sep. 2014 (i.e. ASN.1 freeze is therefore shifted to Dec 2014**; no Rel-12 exception sheets needed in June).

UPCON (SA2)

SA approved a new Rel-13 Work Item (SP-140153) to replace the old Rel-12 Study Item, and confirmed that timing coordination with RAN will be required.

RAN sharing enhancements (SA1)

SA approved additional requirements covering RSE load balancing under EPC congestion situations, SP-140066. A new SA1 WID was also approved in SP 140073 looking at RAN Sharing Enhancements for GERAN and UTRAN as well.

Network virtualization (SA5)

SA decided to start some study in SA5 network management aspects of network virtualization. At next plenary SA will discuss the possibility to extend the study to other SA WGs. See also LS sent to ETSI NFV and SA WGs: SP-140160. During the discussion it was also clarified that any RAN-related virtualization proposal should be submitted to RAN.

Reports

TSGs:

- RAN: SP-140161
- CT: SP-140165
- GERAN: SP-140137

SA WGs:

- SA1: SP-140063
- SA2: SP-140061
- SA3: SP-140017

- SA4: SP-140003
- SA5: SP-140025

2.4 Other

Rapporteur changes

Spec	former rapporteur	proposed new rapporteur

none

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:

Nicola Puddle Work Item on UMTS Heterogeneous Networks

These will be official sessions and agreements may be taken as if they were chaired by a (vice) chairman.

Isolated impact analysis

Note that an isolated impact analysis is required for Rel-11 CRs.

Only corrections where there is a proven problem are allowed for frozen releases (Rel-8 to Rel-11).

RAN2 WG compendium

Latest version can always be found at ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/Org/RAN2_Compendium/

R2-141069 RAN WG2 compendium v23.0 ETSI MCC Info
not treated

3 Incoming liaisons

Note: LSs are moved to the respective agenda items if any.

3.1 Joint UMTS/LTE relevance

MFBI

R2-141042 Reply LS to R2-141012 on inter-RAT capability signalling for MFBI (GP-140235; contact: Huawei); GERAN2; LSin; to: RAN2; REL-12; TEI12;
=> Noted

Capability Signalling

R2-141043 Reply LS to C1-140781 = R2-140027 on provisioning of E-UTRA capabilities in GERAN (GP-140245; contact: Huawei); GERAN2; LSin; to: RAN2; REL-8; TEI8;
=> See reply in R2-141350

UPCON

R2-141066 Reply LS to R2-133030 on Questions to RAN on UPCON (S2-141435; contact: Orange) SA2 LSin to: RAN2 REL-13 UPCON S2-141435, R2-133030
[Late]

=> Noted

In addition the following LSin:
- R2-141056 is treated under AI 5.3 (LTE_UTRA_IncMon-Core)
- R2-141067 is treated under AI 5.1.1 (UTRA_LTE_WLAN_interw-Core)

3.2 LTE relevance

Carrier Aggregation

R2-141059 LS on Release 10 (Rel-10) FGI bit handling for bit 31 (RP-140501; contact: KDDI); RAN; LSin; cc: RAN2; REL-10; TEI10;
=> Noted

Het-Net Mobility

R2-141053 Reply LS to R2-134600 on Context Fetch for HetNet Mobility Enhancements (R3-140476; contact: Qualcomm); RAN3; LSin; to: RAN2; REL-12; HetNet_eMOB_LTE-Core;
=> Noted

GCSE

R2-141060 LS on choice of scheduling period for MBMS (S2-140844; contact: Airbus); SA2; LSin; LS01; to: RAN2; REL-12; GCSE_LTE;
- ALU thinks that we could leave the QCI question to RAN3.

=> Reply that "In accordance with the decision in RAN-63 not to approve a GCSE WI for RAN2 for Rel-12, RAN2 will not introduce reduced MCH Scheduling Period in Rel-12. RAN2 would like to point out that RAN2 will discuss means for forward compatibility. Furthermore, RAN2 would like to point out that in the RAN2 SI, RAN2 determined that the current scheduling period supports the requirements."
- Samsung thinks that RAN realized that on the radio there is not much to do. RAN3 might still need to do something, though. For that, RAN might approve a WI in June or do it with the SA2 WI code.

=> CB: [LTE/GCSE] A draft reply LS on "choice of scheduling period for MBMS" to SA2 can be provided in R2-141762 (ALU)

R2-141061 LS on GCSE QCIs and connected mode DRX (S2-140846; contact: Vodafone); SA2; LSin; LS03; to: RAN2; REL-12; GCSE_LTE;
- NSN thinks that the attachment has some issues with priority handling. NSN thinks that QCI5 should always have highest priority. NSN thinks that maybe SA2 needs to find some general solution to the load on QCI5.

=> Can discuss offline whether we want to reply.
=> Noted

R2-141833 Reply LS on GCSE QCIs and connected mode DRX; from CT1; to SA2; CC: RAN2, RAN3, RAN1, SA1, SA4, CT4, CT3; contact NSN
[Late]

=> Noted

R2-141051 Reply LS to S2-140563 = R2-140811 on error handling in eMBMS (R3-140460; contact: NSN); RAN3; LSin; cc: RAN2; REL-12; FS_LTE_GC;
=> Noted

R2-141068 LS on eMBMS broadcast areas with EUTRAN Cell Granularity (S2-141508; contact: Vodafone) SA2 LSin to: RAN2 REL-12 GCSE_LTE S2-141508
[Late]

- Samsung is not sure whether there would be an impact to the radio interface. Samsung thinks we only care about SAIs and of course they identify just a single cell. QC thinks it could have big impact to service continuity. ZTE thinks there will be interference issues and thinks that the long CP cannot be used. Samsung thinks that all this is operator choice.

=> So far, no specification impacts have been identified. Can think further during the week whether there is any impact to RAN2 specifications.
=> CB: [LTE/GCSE] A draft reply LS "on eMBMS broadcast areas with EUTRAN Cell Granularity" can be provided in R2-141763 (Vodafone)

Capabilities

R2-141065 LS on the problem of UE Radio Capability information size (S2-141251; contact: NTT DOCOMO) SA2 LSin to: RAN2 REL-10 TEI10

[Late]

- Intel thinks that the maximum size the CN can handle can be increased. Intel also thinks that the size may increase further if we allow signalling more band combination. DCM thinks that SA2 is aware that the size is already more than 510 octets but they would like to ensure that the CN can handle it and that RAN2 tries to keep the size to reasonable limits.
- Broadcom thinks that if an MME receives a capability container that is too large, it should drop it completely but not only parts of it.

=> Noted

In addition the following LSin:
- R2-141054 is treated under AI 7.1.1 (LTE_SC_enh_dualC-Core)
- R2-141057 is treated under AI 6.2.1 (LTE_CA_enh-Perf)
- R2-141046, R2-141047, R2-141055 and R2-141062 are treated under AI 7.4.1 (LTE_D2D_Prox-Core, etc)
- R2-141048 and R2-141064 are treated under AI 7.6.1 (LTE_TDD_eIMTA-Core)
- R2-141049 and R2-141050 are treated under AI 7.7 (LC_MTC_LTE-Core)
- R2-141063 is treated under AI 7.8 (LTE_CA_TDD_FDD-Core)
- R2-141697 is treated under AI 13

3.3 UMTS relevance

The following LSin:
- R2-141044 is treated under AI 10.1.2 (EDCH_enh-Core)
- R2-141045 is treated under AI 10.4 (UTRA_SIBenh-Core)
- R2-141052 is treated under AI 10.8.1 (Cell_FACH_enh-Core)
- R2-141058 is treated under AI 10.2 (UTRA_hetnet_mob-Core)

4 Joint UMTS/LTE: Rel-11 and earlier releases

Contributions submitted under this agenda item will be handled in a joint UMTS/LTE session.
Corrections to joint LTE+UMTS functionality in Rel-8 to 11. E.g. "Multiple Frequency Bands per Cell", …
(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)

Provisioning of E-UTRA Capabilities

R2-141350 Draft Response LS on provisioning of E-UTRA capabilities in GERAN; Huawei; LSout; REL-8; TEI8;

=> Change "There is no clear version for the eNB" => "The eNB does not implement a particular Release. Therefore, "

- Ericsson thinks that in 36.300 we usually strived to coordinate with other WGs. This is now no longer the case. Ericsson would like to ensure that we know the possible impacts of the decision. Huawei thinks that if we don't update stage-3 we should also not update stage-2.

✓ => With this change the LS on "on provisioning of E-UTRA capabilities in GERAN" is approved in R2-141761

5 Joint UMTS/LTE: Rel-12

Note that, according to work item approval and time budget discussions at RAN plenary, RAN2 is not expected to work on other (e.g. RAN1- or RAN3-led) Joint Rel-12 WIs than those listed in the following sub-sections.

5.1 WI: WLAN/3GPP Radio Interworking

(UTRA_LTE_WLAN_interw-Core, leading WG: RAN2, REL-12, started: Dec.13, target: Jun.14, WID: RP-132101)
TR of corresponding SI: TR 37.834
Time Budget: 1,5 TU in RAN2-85bis

5.1.1 General

Primarily for LSs and running CRs

Incoming LSs

R2-141067 Reply LS to R2-141026 on CN impacts of RAN2 solutions for WLAN/3GPP radio interworking (S2-141506; contact: Alcatel-Lucent) SA2 LSin to: RAN2 REL-12 UTRA_LTE_WLAN_interw-Core S2-141506, R2-141026

[Late]

- For 2.2 Intel thinks that taking into account the first bullet it seems we can skip many contributions in RAN2.
- DT wonders how to interpret "LTE/UMTS and OPI RAN assistance parameters received from the RAN shall not be used for ANDSF WLAN selection". Ericsson, Broadcom think that the rule determines whether or not the UE may select WiFi at all (or stay in 3GPP) but it shall not be used to select among different WLANs.
- Samsung would like to clarify what "active" means in the first bullet of 2.2. IDT assumes that if ANDSF is configured is takes precedence. Otherwise, the RAN rules are evaluated.
- Huawei thinks that last time we suggested SA2 to define OPI. Now they seem to ask us again. AT&T thinks we should provide any information we have. Samsung thinks there are no contributions but there seem to be two solutions (range and bitmap). NSN wonders whether we need to specify anything in RAN2 specifications. Chairman tends to agree that we just provide a bit string from the RAN.

=> Noted

CRs

- Intel thinks we could discuss stage-2 CRs offline during the week and now quickly look at the rules in 304.

=> CBF: [Joint/WiFi] Discuss how to proceed until next meeting (Intel)

R2-141617 Stage-2 details of WLAN/3GPP radio interworking for LTE; Intel Corporation; CR; 36.300; B; => revised in R2-141847

R2-141847 Stage-2 details of WLAN/3GPP radio interworking for LTE; Intel Corporation; CR; 36.300; B;

- MediaTek thinks that the user shall be allowed to disable offloading. BlackBerry agrees with MediaTek that we could say "… if not prohibited by user preferences". Nokia agrees that the user should be allowed to disable WLAN. Apple thinks that sometimes it could be useful to follow user preferences. Ericsson agrees with MediaTek. Orange suggests to keep a generic statement for now.

=> Remove "The UE is not connected to a WLAN network selected via user preferences" and add a general sentence above saying that "User preferences take always precedence"

=> "of a certain EPS Bearer to or from WLAN" to "of a certain EPS Bearer between E-UTRA and WLAN"

- Broadcom would like to split ANDSF and RAN mechanism in separate sub-sections. Ericsson thinks the current text looks quite good. Intel thinks separation would cause a lot of duplication. Orange and IDT agree.

=> With these changes the CR is endorsed as running 36.300 CR in R2-141856

- Broadcom thinks that network selection is not mentioned in 36.300 whereas it is mentioned in 36.304.

R2-141620 Stage-2 details of WLAN/3GPP radio interworking for UMTS; Intel Corporation; CR; 25.300; B; => revised in R2-141755

R2-141755 Stage-2 details of WLAN/3GPP radio interworking for UMTS; Intel Corporation; CR; 25.300; B; revision of R2-141620;

=> postponed (input to email discussion [85bis#10])

✉ **[Joint/WiFi] Email discussion [85bis#10] Introduction of WiFi Interworking in 25.300 (Intel) until next meeting**
-Copy relevant aspects of the 36.300 CR
-Reflect agreements from this week (UTRAN session) in running 25.300 TP
=> Intended outcome: Draft running 25.300 TP to RAN2-86

R2-141622 Idle mode procedures of WLAN/3GPP Radio Interworking for LTE; Intel Corporation; CR; 36.304; B;
=> revised in R2-141756

R2-141756 Idle mode procedures of WLAN/3GPP Radio Interworking for LTE; Intel Corporation; CR; 36.304; B; revision of R2-141622;

- BlackBerry wonders whether 304 is the right place to specify this. Intel thinks that we of course need to specify this also for connected. But Intel intended to refer from 331 to 304. Samsung thinks that logged measurements we added in 331 even though they are performed in IDLE. Nokia thinks that there need to be something in 304 but of course it could also be just a reference to 331. Nokia thinks that the behaviour is quite similar as priority based reselection and therefore it fits well to 304. Nokia thinks we should try to apply a similar procedure as for priority based reselection and thinks the CR is a good start. MediaTek thinks that MSE is used in IDLE and CONNECTED but it is specified in 304.
- Nokia thinks we should e.g. not talk about mobility but rather about access steering.
- Broadcom thinks that we need to consider the interworking with higher layers which actually execute the traffic routing and network selection.

=> Change to “IF….. indicate to higher layers that traffic shall/should be steered to LTE”.

- BlackBerry think it should say “should”. Intel think that we either need to add WiFi metrics and say “shall” or use “should”. Chairman tends to agree that in order to be able to specify a testable rule, we need to have the WiFi measurement as included. Vodafone agrees that this is the case at least for the direction to WiFi. Broadcom thinks one could make the test independent from the WLAN quality by ensuring very high quality WiFi.

=> Remove “-A predefined duration has passed since the UE has steered the traffic from WLAN to E-UTRAN”

=> FFS on “The timing of RAN rules evaluation and mobility decisions is left for UE implementation”

=> Can discuss further with the aim to progress stage-2 and 3 running CRs during the week.

R2-141846 Idle mode procedures of WLAN/3GPP Radio Interworking for LTE; Intel Corporation; CR; 36.304; B;
=> Postponed

✉ **[Joint/WiFi] Email discussion [85bis#11] Introduction of WiFi Interworking in 36.304 (Intel) until next meeting**
-Reflect agreements from this week in running CR
=> Intended outcome: Draft running 36.304 CR to RAN2-86

R2-141625 Connected mode procedures and RRC signaling of WLAN/3GPP Radio Interworking for LTE; Intel Corporation; CR; 36.331; B;
=> revised in R2-1757

R2-141757 Connected mode procedures and RRC signaling of WLAN/3GPP Radio Interworking for LTE; Intel Corporation; CR; 36.331; B; revision of R2-141625;
=> not treated

5.1.2 Stage-2 aspects

Focus on remaining stage-2 aspects.

Interactions between ANSDF and RAN mechanism
Decouple ANDSF from RAN mechanism? Or allow combination of (legacy) ANDSF with RAN rules?
SA2 agreements (from their LS R2-141067):
- When the UE has an active ANDSF rule, the UE shall use the ANDSF solution.
- When the UE does not support the ANDSF solution or is not provisioned with ANDSF rules, the UE uses the RAN solution if available.

*- It is **FFS** which solution should be used when the UE is provisioned with both RAN rules and ANDSF rules but **none of the available ANDSF rules are valid**.*
*- When the UE is **roaming**, if the **preference for H-ANDSF rules is not set** and the **UE does not have V-ANDSF rules**, it is FFS if the UE can use RAN rules.*

R2-141642 Coexistence between AS mechanism and ANDSF; Ericsson; Disc;
R2-141279 Interaction of ANDSF and RAN rules; AT&T, InterDigital Communications; Disc;
[Moved from 5.1.1 to 5.1.2]

R2-141098 Interaction between (e)ANDSF and RAN rule; CATT; Disc;
[Moved from 5.1.1 to 5.1.2]

R2-141320 Interaction between information provided by eANDSF and RAN; China Telecom; Disc;
R2-141381 Interactions between RAN rules and ANDSF policy; Kyocera; Disc;
R2-141567 RAN solution interworking with ANDSF; Orange; Disc;
R2-141654 Definition of RAN rules and ANDSF rules and their interworking; Huawei, HiSilicon; Disc;
R2-141701 Coexistence between RAN rule and ANDSF; LG Electronics Inc.; Disc;
All 8 Tdocs above not treated

RAN assistance parameters and rules

Apply RAN mechanism to access selection or traffic routing? Or leave it to UE implementation?
Maintain dedicated thresholds/parameters and timer upon handover?
Maintain thresholds/parameters upon loss of 3GPP coverage? If so, for how long? Or release them and leave network selection up to UE?
How to avoid ping-pong? Use certain parameters only uni-directional? Define hysteresis? Define two parameters?
Separate or common parameters for ANDSF- and RAN rule?
Define a TTT/Treselection? Define new L3 filtering?
Avoid too frequent re-evaluation/toggling (e.g. by means of a timer)?
Evaluation periodicity? Specify or leave to UE implementation? How to test?
Operation in CELL_FACH, CELL_PCH and URA_PCH?
Need to inform RAN about UE capability, WLAN presence or offloading success?

R2-141286 Further details of RAN-WLAN traffic steering based on RAN rules; Qualcomm Incorporated; Disc;

- Broadcom thinks that access selection and traffic routing should be independent mechanisms. Huawei agrees with QC and thinks it would simplify it. Ericsson also agrees with QC. MediaTek wonders whether we introduce dependencies between the two. In SA2 they were considered to be independent. QC agrees that the two processes are separate but they don't need separate/different parameters. QC thinks there should be only a single value in the RAN rules for each parameter. MediaTek supports that intention not to have multiple thresholds. Chairman wonder whether we need to differentiate Access Selection and Traffic Routing at all in our specifications. Vodafone thinks we might even want different thresholds. Ericsson thinks a UE does not need to select a WiFi if it is not allowed to route traffic. Intel could imagine that we define rules for traffic routing and leave the Access Selection for UE implementation (but still based e.g. on NW provisioned identifiers). Ericsson thinks that we specify one set of rules that determines based on which conditions the UE shall route traffic via which WLAN. It does not matter when and based on what assumptions the UE performs the Access Selection. Broadcom thinks that this would imply that the UE has to re-do access selection based on the RAN rules. But Broadcom would like the access selection to be done in a fixed priority order and afterwards perform. Chairman thinks we don't need to distinguish the two. BlackBerry thinks that the UE might have to select a different WLAN quite frequently. NSN thinks that this will not be visible in the stage-3 and we can focus on the traffic routing, i.e., specify and test whether the traffic appears on the intended WLAN. Ericsson agrees with NSN. Huawei agrees and thinks that the intention would not be to route traffic from one WLAN to another. LG also agrees that it would be good to simplify in this way. BlackBerry does not think this is a good solution and not in line with earlier assumptions.

Agreements

1 For the RAN mechanism a single set of RAN rules with one set of RAN assistance parameters that determines access selection and traffic routing. It is up to the UE whether it associates with the Access Point only when the rule is met or already before. If multiple WLANs meet the criteria, it is up to the UE implementation which one to choose (or follow the absolute priorities if such are considered necessary and signalled (FFS)).

R2-141702 Handling of the dedicated RAN assistance information; LG Electronics Inc.; Disc;
Proposal 1 & 2:
- CATT thinks this may result in ping pong issues. LG thinks that there is no specific problem.
- Ericsson thinks that the new cell may have less load and then it may be good to use the broadcast thresholds from the target. Chairman wonders whether it matters if the traffic is anyway kept in WiFi. NSN agrees with Ericsson that the UE should rather apply the target cell's parameters. QC would also agree to apply the parameters from the target cell. Samsung would also consider it simpler to reset the parameters during reselection. IDT agrees. QC and IDT think we should also release the parameters during handover. NSN agrees with IDT. Broadcom thinks that forcing the UE to return to 3GPP upon every cell change is not a good simplification as it impacts user experience. Ericsson agrees with Broadcom.

Proposal 6:
- NSN thinks that this implies that the NW has to initiate two subsequent procedures. QC also thinks it should be possible in Release.

Agreements

1 As baseline, the UE releases the dedicated thresholds upon handover and cell reselection

6 The dedicated thresholds are not provided during RRC connection release (only by RRCConnectionReconfiguration)

R2-141705 Considerations around WLAN signal measurements; Ericsson, Huawei, HiSilicon, Sony, LG Electronics Inc.; Disc;
- MediaTek wonders what benefit Ericsson would like to achieve with these benefits. Ericsson explains that it is to avoid accessing WiFis with poor connectivity. MediaTek wonders whether such a metric could ensure this since in some cases a certain signal quality could imply a good quality and in others a low quality. Kyocera thinks that we use such metrics also for cell reselection and handover in 3GPP. Kyocera also thinks that we need a mechanism to go back to 3GPP and considers WLAN metrics suitable for that.
- MediaTek wonders whether we need different thresholds for different frequencies. Ericsson wonders why it would depend on the AP version. It should be more about the stations capabilities. Broadcom thinks that these signal measurements would not give an indication of the channel quality on other channels in case of channel binding.
- Apple wonders whether we are sure that this will work with all WiFi versions.
- MediaTek wonders whether the thresholds would be set to different values for different WiFi Aps or different LTE cells. Ericsson could imagine that there are different values for different LTE cells but probably the same for all WLANs.
- QC thinks that the reliability might not be too good in WiFi. We would need to verify whether the performance requirements could simply be adopted. Ericsson thinks the accuracy requirements are stricter in IEEE than similar metrics in 3GPP. Broadcom thinks there is no certification program in WiFi Alliance for testing these requirements. Ericsson thinks we can require that UEs implementing the WiFi interworking have to fulfil these requirements. Ericsson thinks we can add that once RAN4 has adopted these requirements. BlackBerry thinks that RAN4 cannot require these requirements and we would need to send a request to WiFi Alliance. Telecom Italia thinks that the proposal does not suggest changes in IEEE and is therefore OK. TI also thinks that we could require fulfilment of the requirements already specified in IEEE. Cisco wonders whether there are any chipsets that are certified for these measurements. Nokia thinks that one

would need to communicate with WiFi Alliance. Orange agrees with the proposal and thinks that in order to get a good interworking solution one needs to make use of the existing IEEE requirements and make sure they are tested.

- Telia Sonera supports the proposal but wonders what would happen if these requirements in IEEE would change at any point in time.
- Broadcom thinks that these metrics are today not used for AP selection and it would change behaviour.
- BlackBerry thinks that so far this is all based on UE implementation. Chairman thinks that this is maybe the reason why it is not working and that is why we try to improve and make it testable.
- Intel supports the general proposal and thinks that if we don't adopt these requirements, the rules cannot be specified as "shall". Huawei agrees that we could not guarantee UE behaviour.
- BlackBerry thinks that for CDMA2000 there were already performance requirements and certification tests. This is not the case in WiFi Alliance and therefore, we would need to check with WiFi Alliance. Orange thinks the requirements exist.
- Chairman thinks that there seems to be a lot of support for defining these metrics but we should maybe evaluate how the requirements in IEEE specifications could actually be tested. Huawei thinks that RAN4 are experts for radio requirements and could maybe provide initial input. They might know better whether and what to ask from WiFi alliance.
- TI thinks that WiFi Alliance is similar to GCF.
- Huawei thinks that there seem to be clear benefits of such metrics and there seem to be no arguments against those benefits. It is only a question of how to achieve it. Broadcom and BlackBerry are not sure whether it is really so beneficial.

Agreements

1 RAN2 considers WLAN radio metrics (e.g. RCPI and RSNI) useful for the WLAN/3GPP Radio interworking mechanism provided that they are testable. However, performance requirements and testing/certification thereof requires further analysis.

=> CB: [Joint/WiFi] Can discuss offline during the week how to proceed on the requirements/certification. (Ericsson)

R2-141842 Draft LS on WLAN signal measurements for WLAN/3GPP Radio interworking;

- QC thinks we might want to send it also to "WiFi Alliance OMTG" if we send it to "WiFi Alliance"
- Broadcom and BlackBerry think we should ask more specifically how we intend to use these metrics and whether they are suitable to determine the quality. DT, TI, Orange, Intel and Huawei think the draft LS is OK and reflects the questions we need to ask. TI and Orange think that this is part of the question. We explain what we intend to use them for. MediaTek considers the LS and the questions quite clear. MediaTek would like to add that one intention with these comparisons is to avoid bad QoS on WiFi. DT thinks that using QoS might be unclear. DT thinks that there are other metrics which also don't relate directly to WiFi. AT&T thinks one could certainly add a lot of thinks but AT&T thinks that would not help much. We should better leave it as it is. Ericsson agrees that we just want to know whether the signal strength is as intended. IDT agrees with Ericsson and Huawei that it would be misleading to refer to QoS metrics. IDT considers the LS clear enough as it is. CT supports the LS as it currently is and does not think that further details would help. Intel thinks that we cannot ask IEEE to evaluate our mechanism. That is not the intention. CMCC also does not see a need to modify the LS. BlackBerry thinks we should ask IEEE whether the specifications contain performance requirements for our interworking purposes. IDT and Huawei clarify that this is captured in the last section. Broadcom still thinks that the WLAN radio metrics are not useful for the intended use case. But if we send an LS we should at least ask whether IEEE considers other radio metrics more useful.
- QC wonders what happens if they reply "Yes" to both questions with respect to performance requirements. Ericsson thinks that RAN4 would need to discuss and decide that.
- BlackBerry would like to send it also to WiFi Alliance. Intel thinks that it was discussed for long and most companies want to send it only to IEEE. But as compromise companies are OK to send it to WiFi Alliance in CC. BlackBerry thinks that WiFi Alliance could provide better answers. Intel clarifies that the metrics were defined by IEEE. BlackBerry thinks that

WiFi Alliance create the test cases. DT thinks that we can keep them in CC as a compromise.

=> Change “kindly” to “respectfully”

=> Add “Question 3: Does IEEE 802.11 WG consider any other WLAN signal metric more suitable for the above described mechanism.”

✓ => With these changes the LS on “LS on WLAN signal measurements for WLAN/3GPP Radio interworking” is approved in R2-141855

- Samsung wonders whether we would also need different thresholds for different WiFi carriers. We should maybe also ask that.

R2-141472 Further details on access network selection rules and signaling; Nokia Corporation, NSN; Disc;

Proposal 1.1:

- QC wonders why one could not have both. In UMTS it is good to have both. QC thinks we should look at the actual rules and then decide whether it makes things really complex. Otherwise, we should allow having both simultaneously. IDT also does not think that it would really simplify anything.

Proposal 2:

- IDT wonders what the “rule” is if we consider ANDSF. Ericsson tends to agree but thinks we could make leave it for later.

Proposal 3:

- Ericsson is not entirely convinced that this is needed. Broadcom also wonders whether it is needed given that there are two separate radio interfaces.

Proposal 5:

- Huawei thinks this would be good to have. Nokia explains that this may be useful for the UE to indicate whether or not WiFi is enabled at all in the UE or whether a given WLAN is discoverable or whether it has a quality beyond a given threshold. DT supports proposals 5 and 6 and think they could make the feature a lot more efficient. Intel thinks we should get a better understanding what “is possible” means. Ericsson thinks that it would be efficient for the RAN to have this information. Samsung and MediaTek think that it is solution 3. QC thinks that the case where the UE has disabled WiFi or is using a Home WiFi could be good to have in the RAN. MediaTek thinks there is no problem if the UE is anyway connected to the Home WiFi. AT&T also agrees that we should not discuss this again.

Proposal 6:

- CATT thinks the eNB could actually detect that based on certain bearers being release by the CN (once they have been transferred to WiFi).
- Huawei thinks that this is needed in order to make the solution testable and to allow the NW to further adapt certain thresholds. Alternatively, we would need a performance requirement, i.e., it would need to be specified how much time the UE has to perform the evaluation.

Agreements

1 LTE RSRP / UMTS CPICH RSCP and LTE RSRQ / UMTS CPICH Ec/No thresholds could be configured for the UE at a time (need to look at actual details in the equations).

2 The UE shall apply a timer (like Treselection or TTT) when evaluating the RAN rule (rule is considered fulfilled, all RAN metrics are fulfilled for a configured time interval) Can discuss whether a similar mechanism is needed for ANDSF.

3 Rules for going to WiFi and coming back to 3GPP use different thresholds. (therefore, no prohibit timer is needed)

R2-141216 How to Use Thresholds in UMTS States; CATT; Disc;
[Moved from 5.1.1 to 5.1.2]

- Intel thinks that so far a UE in FDD in CELL_DCH is not required to read SIBs.
- QC would prefer to make it NW configurable whether the UE in CELL_FACH behaves like a UE in CELL_DCH or like a UE in IDLE.

Agreements

2 UE in CELL_PCH/URA_PCH shall apply the same WLAN interworking behaviour as defined for IDLE.

=> Can discuss in UMTS session…
- whether to make it NW configurable whether the UE in CELL_FACH behaves like a UE in CELL_DCH or like a UE in IDLE.
- which parameters to apply in CELL_DCH in case the UE is not provisioned with dedicated thresholds/parameters.
- how to deal with CELL_PCH with dedicated RNTIs.

Discussion from UMTS session

UE in CELL_DCH

- ALU wonders what happens when we don't have dedicated signalling. Does that mean that the UE keeps the thresholds from CELL_FACH. Intel thinks that FDD mode if the UE doesn't receive any dedicates signalling it keeps the information from the previous states. Broadcom wonders what happens when you change cell. Qualcomm doesn't think that it makes sense to keep the information from the other cells.
- NSN thinks that this make increase the overhead of signalling as at every state transition we need to provide the threshold. Broadcom is concerned that the UE is not even aware in which cell the UE is.
- Huawei wonders that if we have dedicated signalling in CELL_FACH, should we still clear the information when we move to CELL_DCH.
- InterDigital would like to ensure that we keep any ANSDF information received in any state.
- Broadcom thinks that for CELL_DCH we should keep legacy behaviour. The UE will keep the dedicated threshold until otherwise configured by the network. Huawei wonders what happens if the target cell doesn't support. Ericsson indicates that the RNC can remove it.
- NSN thinks that we should point out the decision of not releasing the information upon a handover in the joint session. Broadcom thinks that the problem only occurs at RNC relocation as the signalling is always in the RNC.
- Huawei wonders whether you keep the information when you move from CELL_DCH to CELL_FACH. Qualcomm thinks that the UE follows the network reconfiguration message and should keep the information. Ericsson wonders what happens when you move to another cell? Broadcom thinks that it falls under cell reselection and you would clear.

UE in CELL_FACH

- CATT, For TTD there is no dedicated measurement control message. Huawei thinks that the UE can received dedicate signalling anyways.
- Qualcomm thinks that we need to define UE behaviour when the UE performs cell reselection. In LTE the agreement is that upon a handover the UE clears the dedicated signalling. Huawei thinks that CELL_FACH the UE should release the WLAN information as in LTE.
- CATT wonders if we need to clarify the behaviour when the UE has both broadcast and dedicated information. Qualcomm thinks that it should be inline with LTE, dedicate signalling overrides the broadcast.

UE in CELL_PCH

- NSN thinks that a UE in CELL_PCH should keep the dedicated thresholds, but we can't send anything to the UE. Intel thinks that the UE should follow the same as LTE moving from connected to idle. NSN wonders if we need to add this timer in CELL_PCH? Huawei thinks that the need for a timer is not the same as LTE, as if we want to change the dedicated parameters we can always page the UE. Broadcom doesn't want to wake up the UE. ALU thinks that we can keep it simple and treat CELL_PCH the same as idle. NSN doesn't think it is complicated and if the network wants to update the parameters it can page the UE.

- Huawei has a preference to keep the information in CELL_PCH and not use a timer.
- NSN sees the use case as the UE is in connected mode and the network should be able to control. Qualcomm thinks that currently CELL_PCH has been currently specified as in idle so we should keep it simple.
- NSN doesn't see what the problem is with keep the information stored. Qualcomm thinks that we are not adding a third option and behaviour.

General

- Ericsson thinks we need to consider the load we are potentially adding to the BCH. Intel wonders whether we are considering linking this to new SIB enhancements. Ericsson thinks that we need to be careful as to signal the amount of information as currently discuss we would need a full SIB. Huawei thinks that first we should see how much information we need to signal.

Agreements

- In CELL_DCH, for FDD, TDD, the RAN assistance parameters can only be set via dedicated signalling. The UE should not use the broadcast information received from other states when entering CELL_DCH.
- In CELL_DCH, the UE keeps the dedicated information until the network reconfigures or deletes the information. The UE will not release the dedicated information upon a handover (not like LTE).
- If the UE moves from CELL_DCH to CELL_FACH in the same cell, the UE keeps the configuration unless told otherwise.
- In CELL_FACH, for FDD and TDD, dedicated signalling can be used to signal the RAN assistance parameters. Upon cell reselection the UE releases the RAN assistance parameters
- In CELL_PCH/URA_PCH state, dedicated signalling is not used to configure the UE with dedicate RAN assistance information.
-

Working assumption:

- When the UE moves to CELL_PCH/URA_PCH the UE keeps the RAN assistance parameters according to a timer (similar behaviour to idle mode).

R2-141211 Issues on WLAN RF measurements for WLAN/3GPP Radio Interworking; Broadcom Corporation; Disc;
[Moved from 5.1.1 to 5.1.2]

R2-141214 Some Considerations for developing RAN rules for WLAN/3GPP Radio Interworking; Broadcom Corporation; Disc;
R2-141215 Minimum achievable throughput; Broadcom Corporation; Disc;
R2-141217 TP for 36.300, 25.300; Broadcom Corporation; Disc;
R2-141319 RAN Assistance Information Transmission Mechanism; CATT; Disc;
[Moved from 5.1.1 to 5.1.2]

R2-141321 Stage-2 aspects on signalling for WLAN/3GPP Radio Interworking; Samsung; Disc;
R2-141324 Further Consideration on Offloading Evaluation with RAN Assistance Parameters; ZTE; Disc;
R2-141329 Optimization for Concurrent WLAN Offload/Anti-offload and 3GPP HO Procedure; ZTE; Disc;
R2-141333 Further Thoughts on OPI; ZTE; Disc;
R2-141383 Rules and policies using RAN assistance parameters; Kyocera; Disc;
R2-141464 Use of RAN Assistance Parameters in RAN Rules; BlackBerry UK Limited; Disc;
R2-141469 System simulation results for 3GPP-WLAN Radio interworking using RSRP measurements; Nokia Corporation, NSN; Disc;
R2-141582 Configuration of WLAN IDs and RSRP/RSRQ Thresholds in WLAN/3GPP Radio Interworking; NSN, Nokia Corporation; Disc;
R2-141627 Introduction of WLAN/3GPP radio interworking functionality into specifications for LTE and UMTS; Intel Corporation; Disc;
=> revised in R2-141758
R2-141758 Introduction of WLAN/3GPP radio interworking functionality into specifications for LTE and UMTS; Intel Corporation; Disc; revision of R2-141627;

R2-141644 Traffic routing; Ericsson; Disc;
R2-141653 Efficient control of traffic offloading to WLAN; Huawei, HiSilicon, TeliaSonera, Deutsche Telekom; Disc;
R2-141703 Issues regarding RAN assistance information; LG Electronics Inc.; Disc;
R2-141743 Modeling of RAN WLAN interwork in the UE; Mediatek Inc; Disc;
All 19 Tdocs above not treated

5.1.3 Stage-3 aspects

Initial consideration of RRC signalling details in SIB and dedicated signalling and associated UE behaviour.

R2-141643 WLAN identifier provisioning; Ericsson; Disc;
[Moved from 5.1.2 to 5.1.3]

R2-141656 Discussion on the way to transfer WLAN/3GPP interworking parameters; Huawei, HiSilicon; Disc;
R2-141574 Stage 3 design considerations for 3GPP-WiFi radio interworking; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141641 Condition based approach to WLAN/3GPP Radio interworking; Ericsson; Disc;
[Moved from 5.1.2 to 5.1.3]

R2-141281 SIB design for RAN assistance information; AT&T, InterDigital Communications; Disc;
R2-141212 RAN Assistance Parameters for WLAN/3GPP Radio Interworking; Broadcom Corporation; Disc;
[Moved from 5.1.2 to 5.1.3]

R2-141213 Assumptions and Requirements for RAN Rules for Network Selection Use Case; Broadcom Corporation; Disc;
[Moved from 5.1.2 to 5.1.3]
R2-141287 RAN procedures for RAN-WLAN interworking based on RAN rules; Qualcomm Incorporated; Disc;
[withdrawn]

R2-141342 General Principles in Cases of UE Mobility; ITRI; Disc;
R2-141467 Discussion on the application of RAN solution when roaming; ITRI; Disc;
R2-141704 Optionality of the RAN assistance information; LG Electronics Inc.; Disc;
All 11 Tdocs above not treated

5.2 WI: RAN enhancements for MTC and other applications

(MTCe_RAN-core, leading WG: RAN2, REL-12, started: Dec.13, target: Jun.14, WID: RP-132053)
*Note: **Only UEPCOP will be discussed at RAN2-85bis**.*
Time Budget: 0,5 TU in RAN2-85bis
Define support for "Power saving state" in accordance with progress/agreements in CT1.

Open issues:
Need to describe PSM in AS specifications? If so, need for a new RRC sub-state? If so, which state transitions are allowed? What does the UE do when leaving PSM? Cell selection? Or just enter "camped normally" sub-state?
Need to inform RNC/eNB whether PSM is configured for a UE?

R2-141210 Discussion on the introduction of Power Saving Mode in RAN specifications and related open aspects; Intel Corporation; Disc;
Proposals 1-3
- Huawei agrees to P1, 2 and 3. ZTE thinks that there is no need to introduce a new state since the UE is simply not performing any action on AS level when in this state. CATT also agrees that no new state is needed. Intel considers it as IDLE but thinks that a new sub-state should be added to the IDLE state machine description. IDT prefers to specify a new state. NSN agrees with ZTE that we don't need a new state but could consider it a sub-state of IDLE. QC does not see a need for a new sub-state. Broadcom thinks that we should define what the UE needs to do when it enters normal operation again. ZTE agrees

that this is the most important aspect. ZTE thinks it does not require a new state or sub-state. MediaTek thinks that almost the entire 36.304 does not apply for a UE in PSM. When it powers on, it enters IDLE mode and that is the same when coming from PSM. If there are differences, we could capture them.

Proposal 4-9

- Huawei thinks that proposal 4 to 9 can be discussed in CT1. Intel thinks that these aspects are important for us to understand. ZTE agrees with Huawei and suggests Intel to raise it in CT1 if needed.
- Intel thinks that an answer to Proposal 9 is important for us. IDT agrees. NSN assumes that after expiry of the reject timer the UE would try again.

After offline discussion…

- After offline discussion ZTE thinks that several companies do not like to change the figure describing cell selection. ZTE thinks we could clarify when this figure applies.

=> While in PSM, the UE is considered to be switched off from AS point of view

- Intel thinks we also need an CR for UMTS and also for 36.300

R2-141313 Impact of Power Saving Mode on RAN; Ericsson; Disc;
(Focus on section 3.4 PSM indication to RAN)

- Intel is not sure what the concern is since the feature is UE triggered and the UE can also use signaling connection release. Ericsson thinks that a UE can stay in URA_PCH it may stay there for a long time. If the CN intends to keep the UE in PSM, it should however be released to IDLE. Ericsson thinks that the PSM could not be used to its full potential. CATT thinks that the UE does not require any additional information since the UE can transition from URA_PCH to PSM.
- Sony thinks that the UE in PCH could move to FACH to send the signaling connection release and then the NW could release it to IDLE. We might need to clarify that for this case the UE uses the SCR for PSM rather than based on DRX.
- NSN sees the point of Ericsson's proposal but thinks it could be left to RAN3. QC thinks that the same can happen in LTE if the eNB typically keeps UEs for a long time in CONNECTED. QC thinks that after a routing area update the NW could decide not to keep the UE in PCH and rather release the UE to IDLE so that it can go to PSM. Huawei and Broadcom wonder whether the CN could release the Iu signaling connection if it intends to use PSM. ZTE thinks that the CN has not all information that the RAN has and we should avoid that the CN becomes responsible for releasing RRC Connections. MediaTek agrees with ZTE that we should stick to that principle.
- Samsung thinks that there is quite a difference between UMTS and LTE. We should at least agree that it is not needed for LTE. For UMTS we could either agree the same or keep it FFS.
- Orange supports Ericsson's proposal and thinks it could also be adopted for LTE. Intel thinks that we agreed last meeting that the only assistance information is the traffic characteristics. Broadcom also thinks we could consider the same for LTE.

=> We stick to the principle that the RAN is responsible for releasing the RRC Connection (in case of inactivity).

=> CBF: [Joint/UEPCOP] Can discuss further offline during the week whether the RAN needs additional information from CN to ensure efficient use of PSM. (Ericsson)

- Ericsson reports that there seems to be no agreement yet. It seems possible to get such an indication from the UE or the CN. Some companies suggested to have such an indication for LTE and UMTS if it is introduced at all. Ericsson thinks that if we wanted it to come from the CN it could be too late if we agree it only in May. ZTE agrees that there was some interest and it seems worth discussing it further in the next meeting. An email discussion might not be too helpful. QC thinks that maybe SA2 should discuss this as well. Samsung thinks we should discuss whether the eNB needs to know this. If we come to the conclusion that we need it, we could SA2 whether it should come from UE or CN. NSN agrees with Samsung. NSN could consider it somewhat beneficial for UTRAN but not so much for LTE. QC would like to ask SA2 for UMTS already now. Huawei would like to discuss both again at the next meeting.

=> Postponed to next meeting.

R2-141073 Support of Power Saving Mode in RAN2; Huawei, HiSilicon; Disc;

R2-141291 Power Saving State for MTC; Sony; Disc;
R2-141334 Introduction on Power Saving Mode (PSM); Samsung; Disc;
R2-141352 The impact analysis on AS specifications for Power Saving Mode; CATT; Disc;
R2-141442 Supporting Power Saving State in RAN2; MediaTek Inc.; Disc;
R2-141477 On support for UE power saving mode in AS layer; ZTE; Disc;
R2-141587 Discussion on MTC idle states for power saving; Alcatel-Lucent Shanghai Bell, Alcatel-Lucent; Disc;
R2-141583 Power saving mode impact analysis; NSN, Nokia Corporation; Disc;
All 8 Tdocs above not treated

CRs

=> CBF: [Joint/UEPCOP] An updated CR clarifying the interactions between AS and NAS with respect to PSM can be provided in R2-141764 (36.304) and R2-141765 (25.304). (ZTE)

R2-141479 Introduction of support for UE power saving mode; ZTE; CR; 36.304; B;
=> revised in R2-141764

R2-141764 Introduction of support for UE power saving mode; ZTE; CR; 36.304; B;
- IDT and ZTE explain that it is intentional to stop all IDLE mode timers and correspondingly release dedicated cell reselection priorities. This would mimic the behavior of regular power-off.

=> Change “UE shall resume all idle mode tasks” to “UE shall perform all idle mode tasks”
=> Should check whether “stop timers” is clear and results in desired behavior.
- Nokia thinks we should consider specifying it as “power off” in order not to specify it all again.

=> Discuss whether the UE must not perform certain tasks when PSM is configured (e.g. TAU updates).
=> postponed

R2-141480 Introduction of support for UE power saving mode; ZTE; CR; 25.304; B;
=> revised in R2-141765

R2-141765 Introduction of support for UE power saving mode; ZTE; CR; 25.304; B;
=> postponed

✉ **[Joint/UEPCOP] Email discussion [85bis#12] Running stage-3 CRs (ZTE) until next meeting**
-Review 35.304 and 36.304 CRs in R2-141764 and R2-141765
-Check whether “stop timers” is clear and results in desired behavior.
-Discuss whether the UE must not perform certain tasks when PSM is configured (e.g. TAU updates)
=> Intended outcome: 36.304 and 25.304 CRs for RAN2-86

R2-141341 Introducing Power Saving Mode in TS36.304; Samsung; CR; 36.304; B;
R2-141074 Support of Power Saving Mode in 36.304; Huawei, HiSilicon; CR; 36.304; B;
R2-141075 Support of Power Saving Mode in 25.304; Huawei, HiSilicon; CR; 25.304; B;
R2-141218 Stage 2 description of Power Saving Mode feature; Intel Corporation; CR; 36.300; B;
R2-141219 Introduction of Power Saving Mode in UE Idle mode procedures; Intel Corporation; CR; 36.304; B;
above 5 Tdocs not treated

5.3 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, target: Jun.14, WID: RP-132061)
Time Budget: 0.5 TU in RAN2-85bis
General stage-2 principles.

Incoming LSs

R2-141056 LS on RAN4 agreements on 'Increasing the minimum requirements for number of carriers" (R4-140401; contact: Ericsson); RAN4; LSin; LS04; to: RAN2;
- NSN wonders whether RAN4 intends to signal 8 TDD and 8 FDD? Ericsson thinks that the total number for LTE is 13 and the maximum for TDD is 8 and the maximum for FDD is 8.

=> Noted

Discussion

R2-141488 Signalling impact for increased number of frequencies to monitor; Ericsson; Disc;

- Huawei thinks that the need changes also in LTE.
-

=> RAN2 will indicate in an LS to RAN4 the extensive signalling impact to support 9 LTE frequencies in UMTS, and the fact that up to 8 LTE frequencies are already supported in the signalling

R2-141363 Discussion on increasing the minimum requirements for number of carriers; Huawei, HiSilicon; Disc;

Proposal 1:

- QC thinks that we will need capability signalling for IOT. Huawei primarily thinks that this should be a mandatory feature. But we could discuss whether we need IOT signalling.
- QC thinks that e.g. for eMBMS there will be no good reason to increase maxFreq. Huawei think we should discuss case by case.

- Ericsson thinks that we can discuss which fields we need to extend. But LTE thinks we could try to agree to the reply LS informing them about the signalling impact for 9 LTE frequencies. Huawei would be fine with that.

- QC suggests to agree what we will not need to change. We should wait for final RAN4 agreements before agreeing to particular changes. Ericsson agrees.

Proposal 11:

- Ericsson does not see a strong need for such changes and would like to discuss that further. Nokia agrees that there would be no need to report more than 8. NSN thinks that the probability that the UE finds more than 8 cells is very low. QC also agrees that in reality the probability for being able to detect more than 8 neighbours is negligible.

Proposal 12:

- QC would like to investigate this a bit further and is not sure whether really that many events are needed. Ericsson sees no immediate need but is fine to keep it FFS. NSN in principle supports this proposal but would like to keep this FFS. NSN thinks we should also discuss this in the context of DC. NSN thinks that we should have events for the frequencies that we measure on.

Proposal 13:

- QC does not see a need to extend this number. NSN thinks that for CA the target eNB would at most need 4. So, 8 should be sufficient. Huawei thinks that RAN4 is trying to ensure that UEs can measure more carriers. We should not refuse adding the signalling.

Agreements

1 Need for capability/IOT signalling will be discussed later.

For a UE in LTE in IDLE…

3 For intra-frequency cell re-selection, no change is needed on the maximum number of neighbour cells.

4 For inter-freq cell re-selection:

- No change is needed on the maximum number of neighbour cells;
- FFS whether the total number of supported inter-frequencies is extended beyond 8
- No change is needed on the maximum number of CellReselectionPriority.

5 For inter-RAT cell re-selection (UTRA), the current frequency number (16) is sufficient and no change is need.

6 For inter-RAT cell redirection (UTRA TDD), the current frequency number (6) is sufficient and no change is need.

7 For MBMS in SIB15, the current number of supported frequency (8) is sufficient.

For a UE in LTE CONNECTED…

8 The current number of measurement objects (32) is sufficient and no change is needed.

9 The current number of UTRA cells listed in the measurement objects (32) is sufficient and no change is needed.

10 The current number of report configurations (32) is sufficient and no change is needed.

11 The current maximum number of neighbour cells (8) per frequency reported in one measurement report is sufficient assuming that realistically UEs will not detect more than 8 neighbours anyway.

12 FFS whether and to which value the number of measurement id is extended (currently 32)

13 FFS whether at handover, the number of frequencies that can be indicated from source to target eNB needs to be extended (currently 8).

14 For UE capability related constraints (in sub-clause 11.1), no change is needed

R2-141484 draft Reply LS on increased number of LTE frequencies to monitor in UMTS; Ericsson; LSout; LS04; Response to R4-140401 = R2-141056;

- Huawei would like to ask RAN4 about the FFSs, i.e., whether they see a need for extension of those. Ericsson would like to keep those discussions in RAN2.
- Intel thinks we should more clearly ask that we would prefer to go for 8 and also ask them to reply.

=> Add to action that "From RAN2 signalling point of view, a restriction of 8 frequencies would be preferable. RAN2 would appreciate a response from RAN4."

- Huawei wonders what else we can do until receiving a reply from RAN4. Ericsson thinks we probably have to wait for the reply. In general, Ericsson thinks that we need to wait for further input from RAN4 before making any other agreements for this WI.

✓ => With this change the LS on "on increased number of LTE frequencies to monitor in UMTS" to RAN4 is approved in R2-141766

- Samsung wonders whether the measurement requirements will be generally applicable (e.g. including low cost UEs). Should we ask this to RAN4? Vodafone thinks that all UEs should support this new measurement capability. Ericsson thinks we can discuss capability signalling in RAN2. QC agrees. Huawei thinks that at some point RAN4 will need to decide whether it is mandatory. If it is they will override the minimum requirements. If not, they will specify additional requirements.

R2-141245 Increased monitoring in RRC Connected mode; Broadcom Corporation; Disc;

- Chairman thinks that prioritizations are currently ongoing in RAN4 and we should maybe not discuss it in parallel in RAN2. Huawei agrees. Broadcom thinks we should also discuss prioritization in RAN2 at some point. Huawei thinks that depending on the RAN4 decisions, we might not need any such means at all.

=> Postponed

CRs

R2-141492 Signalling impact for increased number of frequencies to monitor; Ericsson; CR; 25.331; B;
R2-141364 Increasing the minimum requirements for number of carriers; Huawei, HiSilicon; CR; 36.331; C;
R2-141365 Increasing the minimum requirements for number of carriers; Huawei, HiSilicon; CR; 25.331; C;
All 3 Tdocs above not treated

5.4 Other Joint Rel-12 WIs/SIs

Input to any other Rel-12 Joint UMTS/LTE WIs/SIs not explicitly listed above. Note that TEI12 should be submitted in 5.4. (EHNB_enh3-Core, leading WG: RAN3, REL-12, started: Sep.12, target: Dec 13, WID: RP-130741)

No contributions under this AI.

5.5 Joint TEI12

Small Technical Enhancements affecting LTE and UTRAN Rel-12 and that do not belong to any Rel-12 WI.
Note: A TEI proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

RACH Issues (Chiba Problem)

Any new solution needed for Chiba issue? Or rely on drive tests & MDT to detect problem and to configure NW appropriately?
De-prioritize best cell (by barring or cell selection offset)? What is the impact on NW performance? What is the probability that there is no "second best cell"? Would the preamble format need to be adjusted anyway in that case?

R2-141266 Deployment of Chiba issueâ€™s solution; Broadcom Corporation, Deutsche Telekom, Sony; Disc; REL-12; TEI12;

- ZTE wonders what the intention of proposal 2 is. Should the NW be retuned so that the offset is actually no longer needed afterwards. ZTE thinks that if the problem can be fixed by appropriate network configuration the UE based solution according to proposal 1 seems not needed. Samsung agrees with ZTE that a proper NW configuration can solve the problem and therefore proposal 1 seems not needed. Ericsson agrees that the contribution shows that even the proponents don't seem to believe that the UE based solution is able to solve the problem. LG agrees as well that if at all an MDT like mechanism might be needed to discover the problem and fix the configuration. NEC also agrees that the UE based solution does not seem to be good as only solution as. But NEC could support having both. Broadcom thinks that the operator cannot identify that a certain UE cannot access the NW at all. Therefore, proposal 1 is needed.
- Huawei thinks that the UE based solution according to proposal 1 would not work with multiple cells. Broadcom thinks that it works that the offset broadcast by cell is applied to all cells which are problematic. Sony explains that the offsets are taken from the SIB of the respective cell. Samsung does not agree to the justification of the UE based solution and wonders how to set a proper offset value. Wouldn't that require a drive test. Sony think that we agreed already a long time that we would need a solution. Sony thinks it would be better not to require a UE based solution but such cases seem to exist where it is needed. DCM supports Broadcom. DCM agrees however with Samsung that finding an appropriate value is difficult and therefore thinks that offset could be set to infinity. Samsung thinks that this would be like considering the cell barred. Samsung thinks that then it would be simpler to add a triggering condition to barring. Ericsson thinks that using a cell that is significantly worse than the best cell is really critical and should be avoided by all means. DT thinks that infinity is a sub-feature of the solution suggested by Sony. MediaTek thinks that an offset does not need a very accurate value. MediaTek would be OK with the Sony proposal but could also accept an addition to barring. QC thinks it is a bit tricky to find a proper solution. Samsung thinks we should not at all introduce a UE based solution.
- Chairman thinks that everyone agrees that the problems should ultimately be solved by appropriate network configuration. Maybe we would benefit from additional information (e.g. in MDT). But it seems less clear that changing reselection or barring behaviour is a good approach since it potentially introduces other problems.
- DT thinks that this is a serious issue that may even affect emergency calls. The offset would be a simple and efficient solution.
- Ericsson thinks it would be more natural to start with the MDT enhancement (Proposal 2).
- LG thinks that a cell barring modification would be simpler than an offset value. Nokia thinks it would not work since the UE could end up on a really bad cell and kill radio performance.

=> CBF: [Joint/RACH] Can discuss offline and come back if an agreeable solution was found (Broadcom).
=> Postponed (not time to conclude)

R2-141551 CHIBA issue; Huawei, HiSilicon; Disc; REL-12; TEI12;
[Moved from 7.10.1 to 5.5]

R2-141526 Solving Chiba issue in E-UTRAN; Ericsson; Disc; REL-12; TEI12;
R2-141132 Chiba issue; Samsung; Disc; REL-12; TEI12;
R2-141235 Solution for CHIBA Issue; NTT DOCOMO, Inc.; Disc; REL-12; TEI12;
R2-141292 Standardised solutions for RACH access failure problems; Sony, Deutsche Telekom, Broadcom Corporation; Disc; REL-12; TEI12;
All 5 Tdocs above not treated

CRs:

R2-141295 Correction to PRACH transmission failure handling - Chiba issue.; Sony, NTT DoCoMo, Deutsche Telekom, Broadcom Corporation; CR; 36.331; F; REL-12; TEI12;
R2-141296 Correction to PRACH transmission failure handling - Chiba issue.; Sony, NTT DoCoMo, Deutsche Telekom, Broadcom Corporation; CR; 36.304; F; REL-12; TEI12;
R2-141293 Correction to PRACH transmission failure handling - Chiba issue.; Sony, NTT DoCoMo, Deutsche Telekom, Broadcom Corporation; CR; 25.331; F; REL-12; TEI12;
R2-141294 Correction to PRACH transmission failure handling - Chiba issue.; Sony, NTT DoCoMo, Deutsche Telekom, Broadcom Corporation; CR; 25.304; F; REL-12; TEI12;

R2-141555 Correction for PRACH problem; Huawei, HiSilicon; CR; 36.331; F; REL-12; TEI12;
[Moved from 7.10.1 to 5.5]

R2-141568 Correction for PRACH problem; Huawei, HiSilicon; CR; 36.304; F; REL-12; TEI12;
[Moved from 7.10.1 to 5.5]

R2-141573 Correction for PRACH problem; Huawei, HiSilicon; CR; 25.331; F; REL-12; TEI12;
[Moved from 7.10.1 to 5.5]

R2-141579 Correction for PRACH problem; Huawei, HiSilicon; CR; 25.304; F; REL-12; TEI12;
[Moved from 7.10.1 to 5.5]

R2-141267 Introduction of Persistent connection establishment failure reporting; Broadcom Corporation, Deutsche Telekom, Sony; CR; 36.331; F; REL-12; TEI12;
R2-141268 Introduction of Persistent connection establishment failure reporting; Broadcom Corporation, Deutsche Telekom, Sony; CR; 25.331; F; REL-12; TEI12;
All 10 Tdocs above not treated

6 LTE: Rel-11 and earlier releases

6.1 LTE Rel-10 and earlier release WIs

Changes to functionality introduced in Rel-8, 9 and 10 even if change is proposed only for Rel-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)

6.1.1 Control Plane

R2-141591 Removal of comment line from EUTRA-UE-Variables imports; Ericsson; CR; 36.331; F; REL-10; LTE-L23, TEI10;
- Huawei does not see a problem justifying a CR. Ericsson explains that during the last CR implementation this comment was accidentally removed and ASN.1 did not complile anymore. Ericsson fortunately discovered the problem and it could be fixed during the implementation. But if not discovered, we would not have broken ASN.1 in published

specifications. Samsung has no problem to remove the line. Samsung thinks that alternatively one could create an IE instead.

=> CR is in principle agreed

R2-141593 Removal of comment line from EUTRA-UE-Variables imports; Ericsson; CR; 36.331; A; REL-11; LTE-L23, TEI10;

=> CR is in principle agreed

R2-141594 Removal of comment line from EUTRA-UE-Variables imports; Ericsson; CR; 36.331; A; REL-12; LTE-L23, TEI10;

=> CR is in principle agreed

R2-141130 ACK/NACK feedback mode on PUSCH; Qualcomm Incorporated; CR; 36.331; F; REL-10; TEI10;

- Samsung thinks the mapping is not exactly the same. Samsung thinks that one should refer to section 7.3.2.1 in 36.213. QC would like to verify that with RAN1 colleagues. NSN wonders whether RAN1 should discuss it. QC thinks that there is already similar text for the Rel-8 IE and QC thought we could simply align it. QC suggests that people check with their RAN1 colleagues offline.

=> CB: [LTE] Can come back to “ACK/NACK feedback mode on PUSCH” during the week after checking offline with RAN1 colleagues (QC)

- QC reports that 7.3.2.1 is only applicable for Rel-11 therefore it needs to be changed to 7.3.

=> Postponed (can provide update to next meeting)

R2-141517 Clarifcation on CSG cell access restrictions; HTC; CR; 36.304; F; REL-11; TEI11;

- Samsung wonders whether this is actually a 36.304 CR. HTC confirms.
- Intel thinks that the behaviour exists since Rel-8 and it was intentionally chosen to be done this way. QC generally supports the CR and they consider the current specification as broken. Samsung also supports the CR. LG also supports the CR but would like to understand whether it was intentionally. Nokia would like to think more about this during the week. Nokia thinks that it is not visible on the NW side whether or not the CR is applied. Samsung wonders if it is currently left to implementation. Nokia thinks that without the CR the UE may come back to the cell faster than every 300s. Ericsson wonders whether it is critical that the UE stays away for 300 seconds. This would be a new requirement for the UE and the question is if that is necessary from the NW point of view.

=> If a CR is needed, change WI code to LTE-L23, TEIxx

=> CB: [LTE] Can discuss further whether the CR is needed and desirable. Can also discuss the release. (HTC)

- HTC thinks that most companies would be OK to have this CR in Rel-12 for LTE. Intel still thinks that no CR is needed and it can be left to UE implementation. A NW would not see a difference anyway. NSN agrees with Intel that the UE may implement it in the way that HTC prefers but we don’t need to change the specification. NSN thinks that if all UE vendors would be fine we could have it for Rel-12. Nokia thinks that the CR is not needed but does not have a strong view. Intel does not agree to this CR. Chairman thinks that it does not solve a problem.

=> Not agreed.

R2-141518 Clarifcation on CSG cell access restrictions; HTC; CR; 36.304; A; REL-12; TEI12;

=> Not agreed.

R2-141358 Correction on measObjectList in VarMeasConfig; Huawei, HiSilicon; CR; 36.331; F; REL-9; TEI9;

- Samsung thinks the current way is the most convenient. For the variables we usually don’t care about backwards compatibility since they are anyway only informative. That means, measObjectList refers to any possible version of measObjectList. Therefore, Samsung thinks that no change is needed. Huawei thinks that this is not really clear from the specification. Huawei thinks we might want to clarify that or make this addition.

=> Can provide an updated CR where the “measObjectList-v9i0” is added to the existing “VarMeasConfig”

=> An updated CR with this change is in principle agreed R2-141767 (Rel-9)

R2-141359 Correction on measObjectList in VarMeasConfig; Huawei, HiSilicon; CR; 36.331; A; REL-10; TEI9;

=> An updated CR with this change is in principle agreed R2-141768 (Rel-10)

R2-141360 Correction on measObjectList in VarMeasConfig; Huawei, HiSilicon; CR; 36.331; A; REL-11; TEI9;
=> An updated CR with this change is in principle agreed R2-141769 (Rel-11)

R2-141361 Correction on measObjectList in VarMeasConfig; Huawei, HiSilicon; CR; 36.331; A; REL-12; TEI9;
=> An updated CR with this change is in principle agreed R2-141815 (Rel-12)

R2-141475 Clarification to OTDOA Assistance Data and Location Information Elements; Qualcomm Incorporated, NSN, Verizon; CR; 36.355; F; REL-9; LCS_LTE;
Change 1:
- Intel thinks that if within a sequence there cannot be entries for different EARFCN. Intel thinks that the RAN5 test case needs to be corrected accordingly. QC thinks that UE vendors should have implemented and verified according to the test case.
- Ericsson thinks that Intel is correct. Ericsson thinks that the assumption was that the UE would only measure one carrier at a time. Therefore, there would be no benefit of mixing. Furthermore, the ASN.1 naming suggests that the entries would not be mixed. Therefore, Ericsson would consider this a functional change if the server sends an unsorted list. NSN thinks that it would be allowed for the server to mix entries of different EARFCNs. QC agrees with NSN. QC thinks that if the intention would have been that all entries in the list have the same EARFCN we would not have added the EARFCN to each element in the list. Ericsson thinks that the elements are in order of priority so that the UE should measure them in this order and should not need to change the carrier in between. NSN thinks that the order is for the server to decide. The UE is supposed to provide the results in the same order. But it does not imply a priority order.
- QC thinks that it is also allowed to provide more than 24 entries with the same EARFCNs and that could be achieved by having entries of the same EARFCN in two lists. Ericsson thinks that would exceed the RAN4 assumptions. RAN4 has actually limited it to 24 entries. QC thinks that if the NW cannot provide a good neighbour list, it would be useful to provide more than 24 neighbours from the server for one EARFCN. Ericsson agrees that it could be good but it would not be a Rel-9 correction but rather a Rel-12 change. Verizon agrees with QC that more than 24 is useful in NW deployments. QC thinks that there is no functional change for the NW. And QC thinks that there is a UE requirement to be able to measure more than 24.
- Intel understands that there could be different implementations where some mix the EARFCNs and others don't and there also seem to be different UE implementations where some UEs are prepared for such a mix and others are not. Therefore, Intel does not want this Rel-9 CR.
- The RAN5 test case allows different EARFCNs in different entries of the same list. However the ASN.1 (maxFreqLayers, NeighbourFreqInfo) seem to indicate that each list covers one frequency only.
- QC would be OK to have mixed EARFCNs in each list and would also be happy if there could be more than 24 entries for a single EARFCN. But QC of course agrees that we should not enforce a non-backward compatible change.

Change 2:
- Intel does not see a need for more than one measurement report. QC agrees that it is nice to have but not as essential as the first change.

=> Can discuss offline what the intention was and what UEs support so that we can clarify accordingly and so that NWs know what they may configure.
=> Depending on the outcome we could also discuss possible enhancements for Rel-12.
=> CB: [LTE/OTDOA] Can come back during the week to "Clarification to OTDOA Assistance Data and Location Information Elements" (QC)

- QC suggests to discuss it further until next meeting.
  => postponed

R2-141170 Discussion of further issues with introduction of new/modified NS values; Intel Corporation; Disc; REL-9; TEI9;
[Withdrawn]

6.1.2 User Plane

The documents in this AI will be treated in the UP session. See Annex G.

R2-141323 RLC ACK_SN for Partial STATUS PDU; LG Electronics Inc.; Disc; REL-10; LTE-L23, TEI10;

R2-141662 RLC ACK_SN Ambiguity with partial status PDU; Qualcomm Incorporated, Broadcom Corporation; Disc; 36.322; REL-8; LTE-23;
R2-141176 Partial Status PDU Handling; NSN, Nokia Corporation; Disc; REL-8; TEI8;
R2-141613 ACK_SN for partial STATUS PDU; Huawei, HiSilicon; Disc; REL-11; TEI11;
[Moved from 6.2.2 to 6.1.2]

R2-141665 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; F; REL-8; LTE-L23;
R2-141667 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; A; REL-9; LTE-L23;
[Withdrawn]

R2-141668 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; A; REL-10; LTE-L23;
[Withdrawn]

R2-141670 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; A; REL-11; LTE-L23;
[Withdrawn]

R2-141621 Avoiding unnecessary retransmissions of AMD PDU segments; Huawei, HiSilicon; CR; 36.322; F; REL-11; TEI11;
[Moved from 6.2.2 to 6.1.2]

6.2 LTE Rel-11 WIs

Changes to functionality introduced in Rel-11.
(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)

6.2.1 Control Plane

Including output of [85#20][LTE/MBMS] Attempt to improve the representation of the reception requirements in 36.302 (ALU)

Carrier Aggregation
Capabilities:
Confirm/clarify that UEs are required to indicate all supported band combinations?
Increase the number of band combinations that a UE can indicate? What is the impact on the size (in byte)?
Address backwards compatibility by requiring that 2DL+1UL combinations are indicated in the legacy field?
Try to compress the signalling by assuming that certain combinations are implicitly supported? Or define new bitmaps in RAN4?
Allow eNB to indicate the bands it is interested in and require UE to filter supportedBandCombination IE accordingly?
R2-141660 On simplifications of CA band combination capability signaling; Qualcomm Incorporated; Disc; REL-11; TEI11;
- Intel also observed that it may in practice not be possible to imply support for a 2C combination from the presence of a 3C combination since the capabilities for the 2C combination may be different than for the 3C (super-)combination.

- Sprint wonders what QC thinks about beyond 3. QC thinks that we certainly also need to prepare for more than 4 carriers.
- QC thinks that we should take care of the capability size and not forward too much to the MME. QC thinks that the eNB could forward a sub-set.

=> RAN2 observes that making assumptions on sub-sets (2C) based on super-sets (3C) may not help to reduce the capability signalling since the capability of a sub-set is likely to be different from the capabilities of the super-set.

=> Whatever change we make we will aim for backwards compatibility (e.g. for existing and deployed band combinations).

- Intel still thinks that also reduced band combination signalling could be beneficial. Intel thinks that it is unfortunate that the UE has to explicitly list all UL single-band combinations for each DL combination.

R2-141494 Signalling of UE-supported Band Combinations; Ericsson; Disc; REL-11; LTE_CA-Core, TEI11
;

Proposal 1/2:

- Huawei agrees and thought it was already clear. Chairman thinks that the specification is only clear about intra-band band combinations (class A, B, C…).

=> RAN2 intends to clarify in 36.306 or 36.331 that the UE shall signal all inter- and intra-band band combinations explicitly (i.e., inclusion of a band combination does not imply support of a sub-set) in the existing signalling (a CR may be provided)

=> Legacy UE behaviour: If the current supportedBandCombination IE does not provide enough room to carry all band combinations supported by the UE, it is up to the UE which band combinations to include (legacy behaviour).

Proposal 3/4:

- Huawei thinks that the solution is generally good but it does not fully solve legacy problems since the legacy field needs to be stored anyway.
- QC thinks it is a good solution but thinks the eNB needs to be OAM configured so that it knows also the frequencies used by neighbour eNBs. But QC thinks that from UE point of view it sounds good. DCM thinks that an operator could do such OAM configuration. DCM thinks it is a good proposal.
- Vodafone wonders about network sharing. Chairman thinks that also that would need to be covered by OAM.
- Vodafone wonders when the inquiry of the capability happens. ALU explains that it depends on whether the MME provides the capabilities to the eNB during connection establishment.
- Huawei thinks that the legacy NW needs to be considered, i.e., what happens in a legacy eNB. Chairman assumes that the legacy IE supportedBandCombination would always be included. NSN thinks that one should maybe require all eNBs in a PLMN to be updated.
- Intel thinks it is a good proposal but we should consider a solution from Rel-11.
- Intel thinks that even with the proposal, the number of entries might need to be increased. QC agrees that this should be carefully considered. Huawei thinks that the current field size is not enough.
- MediaTek thinks we should maybe also look at other solutions.

Enhanced solution:

=> RAN2 will attempt to limit the size of the capabilities provided by the UE to the eNB and from the eNB to the CN.

=> During capability inquiry, the eNB may request the UE to provide a subset of the band combinations. Details are FFS.

=> CB: [LTE/CA] Can discuss offline during the week on Signalling of UE-supported Band Combinations (Ericsson)

- Ericsson reports that there was an offline discussion that concluded to continue discussion of two proposed solutions

✉ **[LTE/CA] Email discussion [85bis#13] CA band combination capability signalling (Ericsson) until next meeting**
-Discuss requesting of subset of the band combination by eNB (see R2-141494)
-Discuss omitting UL band combinations for specific CA combinations (see R2-141172)

-Discuss the need to extend the number of band combinations
-Discuss from which release an enhancement should be introduced
-Discuss how to further progress with legacy signalling in the future
-Should discuss how to maintain compatibility of legacy UEs/NWs.
=> Intended outcome: Email discussion report and CRs to RAN2-86

R2-141131 Overhead reduction for CA band combination signalling; NTT DOCOMO, INC.; Disc; REL-11; LTE_CA_enh-Core;
R2-141172 Discussion on band combination signaling; Intel Corporation; Disc; REL-11; TEI11;
R2-141362 Discussion on the maximum number of band combinations; Huawei, HiSilicon; Disc; REL-11; TEI11, LTE_CA-Core;
All 3 Tdocs above not treated

Deployment scenarios (requested by RAN4):

R2-141057 LS on deployment scenario for Intra-band Non-contiguous CA (R4-140596; contact: NTTDOCOMO); RAN4; LSin; to: RAN2; REL-11; LTE_CA_enh-Perf;
[Moved from 3.2 to 6.2.1]

=> Noted
R2-141099 Update of CA deployment scenarios; NTT DOCOMO, INC., NSN; CR; 36.300; F; related to LSin R2-141057; REL-11; LTE_CA_enh-Core;
- QC wonders what RAN4's decision was regarding 30µs delay spread was for intra-band non-contiguous.

=> Add impact analysis.
=> Can discuss wording offline.
=> CB: [LTE/CA] Updated CRs on "Update of CA deployment scenarios" can be provided in R2-141816 and R2-141817 (DCM)
R2-141816 Update of CA deployment scenarios; NTT DOCOMO, INC., NSN; CR; 36.300; F; related to LSin R2-141057; REL-11; LTE_CA_enh-Core
=> The CR is in principle agreed

R2-141100 Update of CA deployment scenarios; NTT DOCOMO, INC., NSN; CR; 36.300; A; related to LSin R2-141057; REL-12; LTE_CA_enh-Core;
=> revised in R2-141817
R2-141817 Update of CA deployment scenarios; NTT DOCOMO, INC., NSN; CR; 36.300; A; related to LSin R2-141057; REL-12; LTE_CA_enh-Core
=> The CR is in principle agreed

New category:

R2-141356 Discussion on new UE category for 600Mbps; Huawei, HiSilicon; Disc; REL-11; TEI11;
- NSN thinks that RAN plenary intends to discuss this further in June. Huawei agrees that the final decision should be taken in RAN plenary but we should prepare the CRs including the parameters. NSN thinks that RAN plenary agreed to introduce one new category for 450 MBps. So, we should further decisions before we continue. Samsung agrees with NSN that RAN should decide first whether further categories are needed and from which release. Ericsson also agrees and thinks that RAN1 would need to discuss the L1 parameter first once RAN plenary has decided which bit rates to target.

=> RAN2 will add further categories when requested by RAN plenary to do so.
=> Postponed.

System Information on Scell:

R2-141481 Clarificaton on precedence of SCell SI provided dedicately; Samsung; CR; 36.331; F; REL-11; LTE_CA-Core, TEI11;
Change WI Code: LTE_CA-Core, MBMS_LTE-Core, TEI11

- CATT thinks the UE should use MBMS related SI from broadcast and for other purposes from dedicated signalling.
- NSN thinks that the UE is not required to read SIB from the SCell for CA. NSN thinks that this seems to be related only to MBMS and if so, we should clarify it in a possible CR.

- LG sees no need to clarify anything

=> Can discuss offline whether/how to clarify.

=> Change WI Code: LTE_CA-Core, MBMS_LTE-Core, TEI11

=> CB: [LTE/CA] An updated CR on "Clarification on precedence of SCell SI provided dedicately" can be provided in R2-141818 (Samsung)

R2-141818 Clarification on precedence of SCell SI provided dedicately; Samsung; CR; 36.331; F; REL-11; LTE_CA-Core, TEI11;

=> CR is in principle agreed

MBMS

MBMS on SCells:

R2-141651 Further Discussion on eMBMS reception on configurable SCell; Qualcomm Incorporated; Disc; REL-11; MBMS_LTE_SC-Core;

=> revised in R2-141753

R2-141753 Further Discussion on eMBMS reception on configurable SCell; Qualcomm Incorporated; Disc; revision of R2-141651; REL-11; MBMS_LTE_SC-Core;

- Samsung thinks that all frequencies listed in SIB15 shall be synchronized. Ericsson thinks that this does not need to be ensured by the NW. But if it is not the case the NW should be aware that a UE may not be able to receive all MBMS services it indicates interest for. Samsung thinks that the NW does not know which is the highest priority service of the UE and it might move it to the wrong carrier. ALU would suggest to look at the UE behaviour. The rest is up to NW implementation.

Agreements

1 The UE is not required to support MBMS reception from a non-serving cell on the frequency of concern if the non-serving cell and the serving cell(s) are not SFN synchronous.

2 The UE may send MBMSInterestIndication based on the information provided in SIB15, i.e., without checking for synchronization state of the non-serving frequencies.

=> CB: [LTE/MBMS] Can discuss whether we should limit NW configuration so that "all frequencies listed in SIB15 shall be synchronized" (QC)

=> Can discuss whether any other listed issues are still present (eNB seems to be able to treat need for gaps based on MBMS interest indication)

=> Can discuss need for a capability indication for MBMS reception on configured or configurable SCells.

- QC reports that there seems to be consensus for introducing IOT bit(s) for this functionality
  1) Two separate IOT bits for MBMS reception on SCell and configurable SCell
  2) Only one IOT bit for MBMS reception on SCell and configurable SCell
  3) An incapability bit indicating that it does not support MBMS reception on SCells (so that UEs already implementing the functionality don't need to be changed)
- QC thinks that the eNB may have to take certain reconfigurations upon reception of the MBMSInterestIndication so that the UE can perform MBMS reception on non-configured SCells.
- QC thinks that a NW may want to broadcast in SIB15 information about carriers that do not fulfil the sync requirements. QC thinks that UE vendors would be OK to accept asynchronous frequencies if there is a second IOT bit (option 1 above).
- QC reports that RF glitches could not be resolved offline.
  1) Left to UE implementation
  2) Glitches follow similar requirements as for CA (to be determined by RAN4)
  3) No glitches allowed on serving cells when UE decides to receive MBMS on non-configured carriers.
- QC thinks that it would be OK to assume for now that no glitches allowed if we have a separate IOT bit. UEs causing glitches would then have to set the second bit to false until RAN4 allows glitches. NSN thinks that so far the NW assumes that there are no glitches

and a UE not fulfilling that must not send the MBMS interest indication (if it is CA capable). QC thinks that the assumptions were that MBMS reception on SCells would be technically the same as reception on a non-configured carrier. That is not true if glitches are not allowed for the latter. Ericsson thinks that NSN is correct that the UE shall support the whole thing. If UEs cannot support that, we could consider introducing an IOT bit. But it should not be considered that the feature is broken. Some UEs seem to implement it. QC thinks that this is somewhat urgent but understands that NW vendors would have to do changes.

- NSN thinks that UEs should be able to do it without glitch or not use the feature at all.
- NSN understands that there could at most be a justification for the case of non-configured carriers.
- NSN needs to check this further internally.
- Intel would support the QC proposal.
- Ericsson thinks we should consider a capability bit indicating whether the UE supports MBMS reception on SCells or not configured carriers at all. We could then consider a second case focused more on the non-configured case.
- ALU thinks that all issues seem to be only for the non-configured SCell. So, we should only discuss that capability bit. NSN agrees. QC is not sure whether the NW may deactivate an SCell on which the UE is receiving MBMS.
- NSN suggests asking RAN4 about the non-configured carrier case with respect to SCells.
- Samsung thinks that it is somewhat urgent and supports the QC proposal. LG supports QC's proposal. LG would also like to further discuss the details.
- Huawei shares NSN's view regarding the requirements that the specification puts on the UE. QC indicates that the CR was co-signed by AT&T.

R2-141173 MBMS reception on configurable Scell; Intel Corporation; Disc; REL-11; MBMS_LTE_SC-Core;
R2-141139 Remaining issues for eMBMS reception on configurable SCell; Samsung; Disc; REL-11; MBMS_LTE_SC-Core;
R2-141540 Issues on UE Autonomous Configuration of MBMS Frequency; CATT; Disc; REL-11; TEI11;
All 3 Tdocs above not treated

CRs:

R2-141652 Introduction of UE capability for eMBMS reception on SCell and Non-Serving Cell; Qualcomm Incorporated, AT&T; CR; 36.331; C; REL-11; TEI11;
R2-141754 Introduction of UE capability for eMBMS reception on SCell and Non-Serving Cell; Qualcomm Incorporated, AT&T; CR; 36.331; C; revision of R2-141652; REL-11; TEI11;
Change WI Code to: MBMS_LTE_SC-Core, TEI11

R2-141140 Clarification on MBMS interest indication; Samsung; CR; 36.331; F; REL-11; MBMS_LTE_SC-Core;
R2-141141 Clarification on MBMS interest indication; Samsung; CR; 36.331; A; REL-12; MBMS_LTE_SC-Core;
All 4 Tdocs above not treated

Other MBMS:

R2-141635 Clarification on SI reception for MBMS reception; HTC; CR; 36.331; F; REL-11; MBMS_LTE_SC-Core;

- HTC thinks the UE may perform a tracking area update unnecessarily in particular if the TA is different from the TA indicated for the PCell. Ericsson thinks that this will be covered by the Samsung CR that we are still discussing offline. NSN thinks that if we agree this CR we don't need to discuss the Samsung CR further.

=> Can be discussed further offline together with the related Samsung CR in R2-141818

R2-141636 Clarification on SI reception for MBMS reception; HTC; CR; 36.331; A; REL-12; MBMS_LTE_SC-Core;
R2-141637 Clarification on SI reception for MBMS reception; HTC; CR; 36.306; F; REL-11; MBMS_LTE_SC-Core;
R2-141638 Clarification on SI reception for MBMS reception; HTC; CR; 36.306; A; REL-12; MBMS_LTE_SC-Core;
All 3 Tdocs above not treated

36.302

R2-141661 Email discussion [85bis#20][LTE/MBMS] Improve the representation of the reception requirements in TS36.302; Alcatel-Lucent; Disc; result of email discussion [85bis#20][LTE/MBMS]; REL-11; MBMS_LTE_SC-Core;

It is suggested that the topic will be discussed further offline among interested companies.

=> Noted

R2-141142 Correction on simultaneous DL physical channels for idle UE; Samsung; CR; 36.302; F; REL-11; TEI11;

- Samsung thinks that this is a Rel-8 issue but think it is sufficient to clarify from Rel-11.

=> Sufficient to correct in Rel-12

=> A Rel-12 CR is in principle agreed in R2-141819

Other

R2-141138 Cell barring due to reception failure of MIB or SIB1; Samsung; Disc; REL-11; TEI11;

- QC wonders whether this is really a problem.

=> Noted

6.2.2 User Plane

The documents in this AI will be treated in the UP session. See Annex G.

RoHC

R2-141707 ROHC CID reuse; NTT DOCOMO, INC.; Disc; Re-submission of R2-140538; REL-10; TEI10;

R2-141708 Clarification of CID reuse; NTT DOCOMO, INC.; CR; 36.323; F; related to R2-141707; REL-10; TEI10, LTE-L23;

R2-141735 Clarification of CID reuse; NTT DOCOMO, INC.; CR; 36.323; A; related to R2-141707; REL-12; TEI10, LTE-L23;

R2-141734 Clarification of CID reuse; NTT DOCOMO, INC.; CR; 36.323; A; related to R2-141707; REL-11; TEI-10, LTE-L23;

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7 LTE: Rel-12

7.1 WI: Dual Connectivity for LTE (SCE)

(LTE_SC_enh_dualC-Core, leading WG: RAN2, REL-12, started: Dec.13, target: Jun.14, WID: RP-132069)
TR of corresponding SI: 36.842
Time Budget: 3 TU in RAN2-85bis (+ ~2 TU in UP session)

7.1.1 General

Primarily for LSs and running CRs
Running stage-2 CR is in R2-140906.

Incoming LSs

R2-141054 Reply LS to S2-140537 = R2-140808 on system aspects for Small Cell Enhancement work in RAN (R3-140486; contact: Huawei); RAN3; LSin; cc: RAN2;

=> Noted

R2-141827 LS on the scheduling request transmission on the pSCell; RAN1; LSin; Contact: NSN

=> Noted

R2-141840 LS on S1-U tunnel switch for DC; from RAN3; Contact: Huawei

=> Noted

R2-141841 Reply LS on security aspects of protocol architectures for small cell enhancements; from SA3; Contact: Ericsson

- ALU thinks that SCG Addition/Deletion would require some discussion. ALU thinks we have to sort out what happens to SCG bearers what happens when the bearers are released and re-added. Ericsson agrees and thinks that we just agreed to not optimize the

procedure. QC agrees that we don't need to optimize. ALU thinks we could probably answer that we can define such a procedure even if the details are still open in RAN2.

=> On the second question we will reply that: "For rekeying / key refresh RAN2's working assumption is to remove a complete SCG and setting it up again. If RAN2 decides to do it differently, it will anyway result in a complete refresh of all keys for all DRBs in the SCG"

- Ericsson thinks this affects mostly/only 1A.

✉ **[LTE/DC] One week email discussion [85bis#00] to agree LS to SA3 (Ericsson)**
-Attempt to answer the questions in LS R2-141841 from SA3
=> Intended outcome: Approved LS to SA3 in R2-141844

Work Plan

R2-141729 Proposed work plan for Dual Connectivity; NTT DOCOMO, INC.; Disc;
=> Noted

CRs

✉ **[LTE/DC] One week email discussion [85bis#01] on running stage-2 CRs (DCM)**
-Reflect agreements from this week in running CR
=> Intended outcome: Endorsed running 36.300 CR

✉ **[LTE/DC] Email discussion [85bis#14] Merge RAN3 input to RAN2 stage-2 CRs (DCM) until next meeting**
-Merge endorsed RAN3 CR into running RAN2 CR
-Identify possible need for alignment.
=> Intended outcome: Draft running 36.300 CR as input to RAN2-86

7.1.2 Stage-2 aspects

Basic Flows and Radio signalling aspects including capability handling. Primarily based on [85#21][LTE/DC] Basic signalling flows (Samsung)!
UL bearer splitting. Primarily based on [85#22][LTE/DC] UL bearer split (NSN)!
How to provide system information? By dedicated signalling? Or are UEs expected to read SIB from an SeNB's cell?
Reporting SCG-RLF towards MeNB.
PDCP related open stage-2 issues.
Other stage-2 aspects.

Basic Signalling flows

R2-141465 Report on [85#21][LTE/DC] Basic signalling flows; Samsung (Rapporteur); Report; result of email discussion [85#21][LTE/DC];

A.1:

=> Need to discuss whether MeNB can comprehend SCG configuration signalled by SeNB nor that MeNB validates SCG configuration to ensure overall radio configuration complies with UE capabilities

A.2:

- CMCC is concerned that this could increase the overall failure rate. Samsung thinks that this is a rare failure that does not contribute significantly to the overall failure rate. Therefore, it does not require any optimization. Huawei thinks that this could be different in DC. Ericsson, NSN, Broadcom think that there is no need to optimize this exceptional case.

B.2:

=> The X2 details are for RAN3 to decide. But the RRM in the MeNB needs to know whether or not the SeNB can e.g. be added or not.

C.2:

- Ericsson thinks that we should first discuss whether SeNB or MeNB is responsible for managing serving cells of the SeNB. NSN would also like to discuss these responsibilities and thinks that we agreed earlier that the SeNB is responsible for its own resources. Huawei thinks the MeNB should be allowed to release SCells. However, also the SeNB may be allowed to do that too.

=> Discuss C.2 based on contributions below.

D2:
=> FFS whether a new field is needed
G.1:
=> RAN2 will focus on the RRC inter-node message(s). RAN3 is responsible for defining the X2 messages/flows.

=> All Proposed agreements except for C.2 are agreed

R2-141470 Introduction of Dual Connectivity; Samsung; CR; 36.300; B; Update of R2-140906; result of email discussion [85#21][LTE/DC];
- Ericsson suggests to wait for input from RAN3 before we agree this as baseline.
  => postponed

RRM for SCG

C.3: When triggering release of SCG cells, FFS whether SeNB a) can initiate SCG modification procedure by itself or b) provides assistance to MeNB?
Can the SeNB add SCells? Does the MeNB provide RRM measurement results to the SeNB? Can the SeNB influence the measurement configuration? Need to define new RRM Measurement Events (e.g. for identifying inter-frequency candidate for special SCell)?

R2-141516 Dual Connectivity, framework for SCG cell management, including measurement support; Samsung; Disc;
-=> Noted

R2-141531 Adding and releasing DRBs and SCells for SeNB; Ericsson; Disc;
-

Discussion:
- Samsung understands that the MeNB would still be responsible for adding the SCG and for changing from one SCG to another. Ericsson agrees but thinks that even during the SCG addition the SeNB could decide how many SCells to add, i.e., the SeNB decides the actual radio configuration for the SeNB.
- ZTE thinks that during SCG addition, the SeNB could still decide not to add the proposed SCG cell. ZTE thinks that also for SCG release it could be the SeNB or MeNB that triggers it.
- Huawei thinks that the MeNB should suggest addition of SeNB SCells but the SeNB should have the final say whether or not that is possible.
- Panasonic prefers the Ericsson proposals where the SeNB gets input to its own RRM mechanism and decides on its own resource configuration.
- Samsung wonders whether it might imply that the MeNB needs to tell the SeNB how loaded it is and whether it likes the SeNB to take more cells. Panasonic thinks that information is not needed. Ericsson agrees that it is not needed since the UE has a lot of information from the UE configuration. Ericsson considers it rather problematic that for the Samsung proposal the SeNB would need to provide a lot of load information to the MeNB to do the RRM.
- MediaTek thinks that the SeNB should remain responsible for its SCells and decide whether it wants to add another SCell for a UE. The MeNB should request a capacity for a UE from the SeNB.
- Ericsson thinks that it would also be difficult for the SeNB to decide the special SCell while it is not responsible for addition and release of other SCells.
- NEC thinks that the SeNB should receive a measurement report and take decisions based on that which SCells to use.
- Samsung thinks that none of the solutions is ideal. Samsung thinks that if the SeNB decides to release an SCell in order to reduce a problem for itself, it might actually create a bigger problem for the MeNB. That might speak in favour for a central node deciding.
- Panasonic reports after offline discussion that there was no clear conclusion. Panasonic thinks that if the MeNB was to decide the SCell addition, the SeNB would probably need to provide load information. RAN2 is not sure whether any suitable load information is available. If the SeNB is responsible for adding or changing its SCells, it would need measurement results from the MeNB. Panasonic thinks it is still open whether and how the special SCell would be changed.
- Broadcom thinks that both nodes need to be able to initiate release of SCells.

Agreements

1 For SCG addition to MeNB takes the initiative but the SeNB may reject

2 For SCG release the MeNB may take the initiative and the SeNB shall not reject

3 For SCG release the SeNB may take the initiative and the MeNB shall not reject

- Chairman thinks that we should avoid introducing competing RRM mechanisms in different nodes. NSN agrees and think that we should maybe design it for the case where the SeNB can accept the cell that the MeNB suggested. However, that should be an exception.

=> CB: [LTE/DC] FFS which node decides based on what information which SCell to add or release in the SCG (Ericsson).

- Samsung thinks the latest proposal seems still not agreeable to all companies.

R2-141828 Way forward on SCell addition and release; Ericsson

-

Agreements

1 MeNB can request SeNB to add particular SCells to the SeNB. SeNB can reject.

2 SeNB can provide assistance data to the MeNB (FFS, e.g. SCell overload status, DRB resource shortage, cell load status, suggested cell addition list), which may trigger the MeNB to initiate SCG SCell addition or SCG SCell release

3 MeNB can provide latest measurement results in SCG addition and SCG SCell addition request. (FFS for which SeNB cells)
There is no generic forwarding of measurement result from MeNB to SeNB.

4 MeNB can trigger release of non-last SCells of SCG (and SeNB cannot say no)

5 SeNB can trigger release of non-last SCells of SCG (and MeNB cannot say no)

✉ **[LTE/DC] Email discussion [85bis#15] SCG RRM (Samsung) until next meeting -Discuss the FFSs on which assistance information to provide and for which SeNB cells to provide measurement results.**

R2-141541 SCG release procedure; Ericsson; Disc;
R2-141549 Considerations on SCG Release Issue; CATT; Disc;
R2-141561 SCG release procedure; NEC; Disc;
R2-141611 RA and RRC Reconfiguration for SCG addition/modification; NSN, Nokia Corporation; Disc;
[Moved from 7.1.4 to 7.1.2]

All 4 Tdocs above not treated

Mobility (SeNB change and MeNB change)
D.1: Upon change of SeNB, it is FFS how release of source SCG configuration is performed i.e. whether MeNB initiates a single procedure towards source SeNB or two separate procedures (8 support option a, 8 support option b and 3 did not express clear preference)
Allow target (M)eNB to add/maintain SCG? At least for intra-eNB or intra-cell handover?
R2-141537 Mobility procedures for dual connectivity; Ericsson; Disc;
Proposal 2:

- NSN thinks that RAN3 is discussing it. Anyway NSN would consider it better if the SeNB is aware of the upcoming release before the UE gets the reconfiguration.

Proposal 3:

- CATT thinks this could cause a problem with the X2-AP IDs if those are in error occurs and the message 3 is lost. Ericsson thinks this could be discussed in RAN3. But from RRC point of view there is no need to wait for a reply from the SeNB.

Agreements

1 The same inter-node RRC messages defined for SCG modification are used during the SeNB change procedure.

2 From RRC point of view the MeNB can generate the RRCConnectionReconfiguration in releasing the source SeNB.

It is up to RAN3 to decide whether the SeNB replies with a X2-AP message to the release command.

It is up to RAN3, whether a single procedure towards source SeNB is used to start data forwarding and release the UE context in source SeNB.

4 The same inter-node RRC messages defined for legacy handover are used during the MeNB change procedure

R2-141409 SCG status during PCell handover; Broadcom Corporation; Disc;
- ZTE wonders whether this would only be applicable to split bearers.
- Samsung thinks that the key in the SeNB will also change. Therefore, a RA in the SeNB is needed and the L2 would need to be reset. Samsung thinks it would reduce the NW signalling since it would avoid but it would be a new procedure.

=> No need to optimize. SCG is released before an intra-cell or intra-MeNB handover and may be re-added afterwards.

R2-141433 SCG mobility procedures; NSN, Nokia Corporation; Disc;
R2-141502 Mobility scenarios for dual connectivity support; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141503 Discussion on especial mobility scenarios for dual connectivity support; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141559 SeNB change procedure; NEC; Disc;
R2-141557 MeNB to (M)eNB handover procedure; NEC; Disc;
R2-141432 MeNB handover procedure; NSN, Nokia Corporation; Disc;
R2-141631 SCG resource release and forwarding during SeNB change; NTT DOCOMO, INC.; Disc;
All 7 Tdocs above not treated

RRC Container Handling and UE Capabilities

R2-141167 Handling of UE capabilities in dual connectivity; Huawei, HiSilicon; Disc;
- ZTE thinks that “Total number of DL-SCH soft channel bits” could be handled in the same way as the other L1 parameters. Huawei explains that the soft channel bits are distributed across the configured SCells according to a rule specified in RAN1. Therefore, both eNBs need to know how many carriers the other node has configured in order to determine how the UE splits the soft buffer.
- ZTE wonders why the “supportedBandListEUTRA” needs to be coordinated in any way. Huawei thinks this may primarily be important if the SeNB is allowed to configure SCells.
- Samsung wonders why the MeNB needs to comprehend the SeNB configuration. Huawei thinks that e.g. the soft channel bits are determined based on whether or not MIMO is applied and that is up to the SeNB to decide.

Agreements

1 For “Maximum number of DL-SCH transport block bits received within a TTI” and “Maximum number of UL-SCH transport block bits transmitted within a TTI ” the MeNB splits these UE capability restrictions between itself and the SeNB.

2 For all other capabilities (e.g. “Total number of DL-SCH soft channel bits”, “maxNumberROHC-ContextSessions”, “supportedMIMO-CapabilityUL-r10”,

"supportedMIMO-CapabilityDL-r10", "supportedBandCombination") the MeNB provides the MCG configuration and the complete UE capabilities to the SeNB. MeNB and SeNB comprehend the configuration of each other, and use the left-over capability according to each other's configuration and the UE maximum capabilities.

R2-141513 Dual connectivity, signalling flows remaining issues; Samsung; Disc;
R2-141110 RAN level QoS and UE radio capability parameters guarantee for dual-connectivity; CMCC; Disc;
R2-141128 Discussion on coordination between MeNB and SeNB about UE capability; ZTE; Disc;
R2-141129 Handling of Layer 1 processing capability; Qualcomm Incorporated; Disc;
R2-141174 UE capability handling for dual connectivity; Intel Corporation; Disc; related to [85#21][LTE/DC] Basic signalling flows;
R2-141344 Discussion on UE Capability Coordination in Dual Connectivity; ITRI; Disc;
R2-141394 RRC container handling and rejection with X2 procedures; Kyocera; Disc;
R2-141530 Handling of RRC containers and UE capabilities; Ericsson; Disc;
R2-141577 UE capability coordination; CATT; Disc;
R2-141752 L1 UE capability handling for dual connectivity; Samsung; Disc;
[Late]

All 10 Tdocs above not treated

UL bearer split

R2-141102 Uplink Bearer Split Email Discussion Summary; NSN; Disc; results to email discussion [85#22][LTE/DC];

Proposal 1: note that the support of uplink bearer split for data boils down to allowing PDCP PDUs (and the corresponding mechanisms) in addition to RLC status reports.
Proposal 2: separate buckets are used for downlink bearer split
Proposal 3: confirm that separate buckets can also be used for uplink bearer split
Proposal 4: to reflect RLC status PDUs in the BSR for downlink bearer split, no new mechanisms are introduced, each MAC entity can rely on existing buffer size calculations at RLC
Proposal 5: to reflect RLC status PDUs in the BSR for uplink bearer split, no new mechanisms are introduced, each MAC entity can rely on existing buffer size calculations at RLC
Proposal 6: confirm that to calculate data available for transmission at PDCP for split bearers in uplink, ratios of the buffered data can be used to report the BSR in MCG and SCG
Proposal 7: no changes are brought to the BSR/SR triggering mechanisms to handle the arrival of an RLC status report for DL split bearers
Proposal 8: no changes are brought to the BSR/SR triggering mechanisms to handle the arrival of PDCP PDUs for UL split bearers
Proposal 9: note that having to deal with parallel transmissions in uplink is not a characteristic limited to uplink bearer split but a property of dual connectivity
Proposal 10: the UE maintains one PDCP buffer per uplink radio bearer

=> Noted

R2-141265 Comprehensive Evaluation of UL DRB Splitting; Panasonic; Disc;

- CMCC assumes that the UE was in a bad position and therefore the results are not good. Panasonic clarifies that they were just looking into the TCP aspects. Chairman thinks that that all results indicate that UL split is always worse than using only one UL even if UL power limitation is not considered. Samsung agrees.
- Panasonic points out that they transferred large files in UL via TCP.
- Panasonic thinks that by limiting the UL data to one link (e.g. SeNB) one may get worse throughput than when allowing UL data going via the other link.
- Chairman thinks that maybe one could attempt a strategy where during small UL buffer times all data is served by the MeNB in order to get low e2e latency; when having a large UL buffer the SeNB could assist since then throughput is more important. But it seems that the solution with 50/50 split would be a pretty bad choice. The DCM solution with the threshold could be more reasonable then. Samsung agrees but thinks that many issues are still open and we should not spend time on designing such a solution.

- NSN indicate that they showed gains in the last meeting and think we should adopt UL bearer split and discuss afterwards on the details. Samsung is not sure whether we really need such an enhancement.
- QC thinks that there will be a gain in system capacity at higher load. Intel thinks that we have only seen throughput gains so far. Ericsson thinks that if we want to achieve offloading we can just configure the UL to be used via RRC. Ericsson would consider UL throughput enhancement attractive but considers it difficult to achieve it in practice.
- Broadcom thinks we should support UL bearer split as suggested in the email discussion. LG and Huawei thinks that the email discussion primarily revealed more open issues.
- NSN thinks that more companies seem to be in favour of UL bearer split. DCM would suggest that for the progress of the WI not to support UL bearer split for the time being. If the proponents can show that there is no complexity and that there is an easy solution to provide gains, it could still be considered. Samsung supports that.
- Chairman thinks that there is no consensus to support UL bearer split.
- LG and Huawei think that we could signal a ratio of 100/0 or 0/100 in Rel-12 and consider allowing other splits in Rel-13. Broadcom does not consider this as a compromise and would rather suggest to specify it and leave it for UE and NW whether to use it. MediaTek thinks that if we don't support split we should not configure and ratio.

Informative show of hands
a) UL bearer split is supported in Rel-12: 17
b) UL bearer split is **not** supported in Rel-12: 17

=> We do not support UL bearer split in Rel-12 assuming that it causes less complexity and helps the progress of the WI.
=> For split bearers, the network configures via RRC over which link the UE transmits UL PDCP data.
=> The UE does not report PDCP data as available to the other eNB

- QC and NSN are not happy with the way the discussion happened. We should have discussed the technical aspects of the email discussion rather than whether or not one can achieve the gains. The chairman thinks that it became apparent that a solution to achieve any gains would require very careful technical analysis and studies. And we don't seem to have time for that. Samsung disagrees with QC and NSN and thinks we discussed the topic a lot in the last few meetings. Samsung thinks that we did not find a solution that companies consider as providing sufficient gains. Ericsson thinks that the email discussion showed that e.g. the way how the PDCP buffer size is split was touched upon but there were a lot of technical issues open. CMCC thinks that there would be gains of UL bearer split. CATT thinks that results we saw show the opposite. Broadcom shares NSN's and QC's view. Samsung thinks that even after the email discussion there are still many open technical issues that would need to be solved. Secondly we should only introduce new functionality if there is significant support for doing so.
- QC and NSN would like to be able to come back to the next meeting e.g. with a concrete CR. Panasonic thinks that they also expect gains.
- Intel thinks that there have been lengthy technical discussions over several meetings and Intel wonder whether further discussions would result in a different outcome. ALU thinks we did have a technical discussion and the companies' views were based on that discussion we had throughout the last couple of meetings and the email discussion. Samsung thinks the email discussion was not whether we do it or not but that was what we actually had to decide in this meeting. Therefore, Samsung thinks we should stop the discussion. Samsung thinks we are spending way too much time on this topic. NSN thinks that UL bearer split is there by default and we would need consensus to remove it. Huawei thinks we would need to agree a good procedure on e.g. how to split the PDCP buffer and there were 5 options as outcome of the email discussion. It would require more careful discussions and Huawei thinks it is a sensible decision not to introduce it.
- Chairman assumes that companies have made their mind taking into account the discussions, email discussions and input provided to the last couple of meetings.

R2-141398 Discussion on UL split operation based on configurable ratio; Samsung; Disc;
R2-141713 Threshold based splitting for UL bearer split; NTT DOCOMO, INC.; Disc;
[Moved from 7.1.4 to 7.1.2]

Above 2 Tdocs not treated

R2-141399 On prioritizing MCG uplink transmission in power limited state; Samsung; Disc;

- Samsung would consider proposal 3 as an optimization that could be skipped if considered too complex for the UE's power scheduling.
- LG supports proposal 1 and 2.
- Samsung explains that RAN1 was discussing the topic but they have not taken any decision.
- NSN agrees with 2 and 3 but thinks that RAN1 is discussing proposal 1 and we should maybe not overrule the discussion. Samsung would only like to provide input to RAN1. RAN1 should make the final decision.
- Broadcom thinks that this Proposals will lead to that data is prioritized over MCG even if the UL towards SCG is better. Samsung hopes that it will be a rare case.
- Ericsson wonders whether the link adaptation in the eNB may actually target an operating point with more HARQ retransmissions, i.e., aim for power over allocation. Then, the UE should not prioritize the MCG UL power. IDT thinks that we cannot protect against over-allocation.
- Panasonic thinks that in Rel-10/11 we decided that PUSCH on all SCell should scale power equally. The assumption was that all PUSCHs have the same operating point.
- Samsung thinks that we could hint to RAN1 that the MCG carries the SRBs and it therefore essential for maintaining the RRC Connection. Ericsson thinks that not necessarily all traffic in the SCG is more important than any traffic in the MCG.
- Ericsson thinks we should discuss it further.
- LG thinks that we should prioritize MCG over e.g. PUCCH of the SCG.
- QC thinks that PHR would tell the information.
- Nokia thinks that if the subframes are not synchronized the power prioritization is particularly difficult.
- DCM supports the proposals.
- Partech thinks that e.g. PUCCH to SeNB is also quite essential since it provides input to RRM mechanisms.
- NEC thinks that the whole issue could be avoided if power was semi-statically configured for SCG and MCG.

Working Assumption

1 The MCG serving cells carry SRBs and are therefore essential for maintaining the connection towards the UE.

2 The preamble transmission in the PCell is considered more important than preamble transmission in any other cell.

=> CB: [LTE/DC] A draft LS to RAN1 on "UL power control considerations" can be provided in R2-141829 (Samsung)

R2-141407 Draft LS on prioritizing MCG uplink transmission; Samsung; Disc;
=> revised in R2-1829

R2-141829 Draft LS on prioritizing MCG uplink transmission; Samsung; Disc;
✓ => The LS on prioritizing MCG uplink transmission to RAN1 is approved in R2-141848

R2-141103 Way Forward for Uplink Bearer Split; NSN, Deutsche Telekom, InterDigital, Mediatek, Nokia Corporation, Panasonic, Qualcomm; Disc;

R2-141106 Further Clarification on Dual Connectivity Terminology; CMCC; Disc;
[Moved from 7.1.1 to 7.1.2]

R2-141183 UL bearer split for dual connectivity; Intel Corporation; Disc; related to [85#22][LTE/DC] UL bearer split;

R2-141392 User plane aspects to support uplink split bearer; Kyocera; Disc;

R2-141497 Discussion on UL bearer split support in Rel-12; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;

R2-141666 Uplink data transmission details with split bearers; Broadcom Corporation; Disc;
[Moved from 7.1.4 to 7.1.2]

All 6 Tdocs above not treated

System Information for SCell

R2-141101 System Information and SFN handling for Dual Connectivity; NTT DOCOMO, INC., Samsung, LG Electronics Inc., CATT, Mediatek, Ericsson, InterDigital, Broadcom Corporation, Nokia, NSN; Disc;

- ZTE and QC think that if we want to support non-SFN alignment, we should rely on that the UE acquires the MIB.
- DCM thinks that RAN1 agreed that also unsynchronized networks should be supported. Therefore, we should also support non-SFN alignment. QC thinks we should anyway investigate the impact of SFN non-alignment. QC thinks that if the offset is less than 4 subframes, the UE can still determine where the SFN starts. Ericsson thinks that we don't need SFN alignment for any feature. They should all also work without. ZTE agrees with Ericsson.
- ALU wonders whether release and addition would deliver good enough performance. Broadcom thinks we do that also for CA. ALU thinks that if there is just one cell in the SCG, it actually results in SCG release and add which is as bad as SeNB change. Huawei thinks that when L2 is reset (RLC/MAC), it would result in a hick-up of maybe 10 ms and should be OK. DCM agrees that it would not happen often and should be OK. ALU would like to understand how this release and add would look like on eNB and UE side. Would it be the same or different from the inter-SeNB change? Chairman wonders what impact that has on the earlier discussion on SCell/SCG release. May the SeNB generate the RRC container for the release? Does the MeNB need to comprehend that and understand also that it is just a combined release with addition for the purpose of SeNB SIB update. Huawei thinks the SeNB could inform the MeNB that it would like to change the SIB and the MeNB puts the SIB in the RRCConnectionReconfiguration.
- Ericsson thinks that it would be good to provide SFN offset via dedicated signalling. It would not require the UE to read MIB from the SCG cells and may also allow the NW not to provide MIB at all on those cells. Broadcom agrees that a DTX cells would not provide MIB and that would speak in favour of dedicated signalling.
- Samsung wonders whether the UE for Alt. 1would also need to follow paging indications. Huawei thinks that MIB content cannot be updated dynamically and the paging does not indicate MIB change.
- Huawei clarifies that also for Alt. 1 the SeNB may need to know the SFN offset in order to determine DRX and measurement gap occasions.

Agreements

1 Dedicated RRC signalling is used to acquire SI of SCG cells.

FFS how the change of SI is provided to the UE (e.g. whether SI changes of SCG cells are handled by removal + addition of the concerning cell and whether that can be done with one RRC procedure.)

3 The feature of Dual Connectivity should work in a network where SFNs are not aligned between the MeNB and the SeNB.

4 RAN2 intends to rely on UE acquiring MIB on PSCell in order to get the SFN of the SCG and to learn the offset between SFN on MCG and SCG (if any).

5 RAN2 assumes that the SeNB should be able to acquire the SFN offset to the MCG of the UE (e.g. in order to align DRX occasions or measurement gaps) and would need to be determined by an X2 procedure or by UE reporting.

=> CB: [LTE/DC] A draft LS to RAN3 and RAN4 to verify feasibility of 4 and 5 above can be provided in R2-141821 (Samsung)

R2-141821 [draft] LS on SFN handling in the dual connectivity; Samsung; LSout;

=> Remove "*RAN2 would like to request RAN4 to verify the feasibility of the identified solution.*

Regarding the second agreement, RAN2 would like to ask:

- *RAN3 if it is feasible to rely on network based mechanism (including usage of the X2 interface) for the acquisition of the SFN timing difference between MCG and SCG.*

- *RAN3 and RAN4 if it is feasible to rely on UE reporting mechanism and what is the accuracy achieved by this mechanism (in sub-frame granularity if possible).*"

✓ => With these changes the LS on SFN handling in the dual connectivity is approved in R2-141849

R2-141121 System information update scheme for SeNB; ZTE; Disc;
R2-141676 System Information delivery in Dual Connectivity; Qualcomm Incorporated; Disc;
R2-141118 System Information Delivery for SCG; MediaTek Inc.; Disc;
R2-141326 How to provide System Information in Dual Connectivity; Samsung; Disc;
R2-141331 On handling SFN for Dual Connectivity; Samsung; Disc;
R2-141343 System Information Acquisition for SCG in Dual Connectivity; ITRI; Disc;
R2-141529 System Information in dual connectivity; Ericsson; Disc;
R2-141572 System information for SCG; CATT; Disc;
All 8 Tdocs above not treated

SCG Radio Link Failure

Shall the UE inform MeNB of physical layer problem (L1 out of sync, like for PCell)? Or rely on RRM measurements and information provided from SeNB to MeNB? If RLM, reuse T310, N310 or introduce new timers?
How/when does the UE resume the UL transmission?
Shall the UE inform MeNB of random access failure associated with an SCG cell other than special SCell?
Other information to add to the failure report (e.g. available measurements)? Or rather keep the size small?

R2-141184 Radio link failure handling for dual connectivity; Intel Corporation; Disc;
-

Agreements

1 UE initiated random access is only supported to the special SCell but not for other SCells of the SCG.

2 When there is RACH failure associated with SCells in SCG other than special SCell, UE does not report such failure to MeNB, and UE does not stop UL transmissions towards SeNB.

R2-141672 On RLF and RLM requirements for the special SCell; Qualcomm Incorporated; Disc;
- QC explains that one of the main benefit is that the UE stops jamming the UL.
- ZTE supports RLM on SCG.
- ZTE thinks that the UE should report that the RLF condition on the SCG was met. That would be faster than a measurement report. MediaTek thinks that an RRM measurement is not any slower than the RLM triggering. QC thinks that RSRP and RSRQ are not necessarily good metrics. They may indicate e.g. high RSRP but still the SINR is bad and therefore the UE has link issues. RLM is better for detecting these link issues. Ericsson agrees with QC that RLM would be the better metric for determining radio issues. LG also agrees. Huawei agrees that RRM measurements are not always suitable to discover radio problems. Samsung also supports RLM and thinks that it is more robust and thinks that the UE will anyway monitor.
- MediaTek think that RLM was tailored to really losing the connectivity. Intel also thinks that based on RRM measurements the SCG would usually be removed long before triggering RLM.
- ALU wonders which node is expected to take the action upon reception of the indication. QC thinks that first of all the UE should stop UL transmission to the SeNB. QC thinks that based on the report the MeNB may release SCG cells. ALU thinks that also the SeNB may take such actions based on CQI.

Proposal 1a:
- Ericsson thinks the UE should also indicate which RLC entity caused the failure in addition to the actual trigger. Huawei thinks that RLM, RA, RLC would be useful but the individual LCHID is maybe not needed. NSN would also consider RRM measurements useful.

Proposal 2:

Agreements

1 UE shall perform radio link monitoring on the special SCell (S-RLM) for the purpose of detecting L1 out-of-sync. S-RLM specification should reuse the current RLM specification as much as possible.

1a UE shall report S-RLF to MeNB (triggered by RLM, RA or RLC) and indicates which of the triggers were met.
1b UE shall suspend UL transmissions to SCG upon S-RLF

2 UE is not required to monitor the PDCCH for the SCG upon detecting S-RLF.

3 The data transfer for a split bearer over the MeNB is maintained upon S-RLF.

5 The UE does not resume the connection to the SCG autonomously, i.e., it is up to the MeNB.

R2-141127 Discussion on RLF of PSCell; ZTE; Disc;
R2-141164 Reporting connection problems of SCG towards MeNB; Huawei, HiSilicon; Disc;
R2-141200 Discussions on reporting SCG-RLF towards MeNB; KDDI Corporation; Disc;
R2-141345 Further Discussion on RLF Handling in Dual Connectivity; ITRI; Disc;
R2-141379 Consideration on SCG RLF; Kyocera; Disc;
R2-141355 RLM for SCE with Dual Connectivity; InterDigital Communications; Disc;
R2-141418 Handling of radio link problem in SCG SCells; LG Electronics Inc.; Disc;
R2-141490 Need for RLM on pScell; Samsung Electronics; Disc;
R2-141542 Secondary Radio Link Failure (S-RLF); Ericsson; Disc;
R2-141564 Remaining Issues of SCG RLM; CATT; Disc;
R2-141612 RLM for PSCell; NSN, Nokia Corporation; Disc;
[Moved from 7.1.3 to 7.1.2]

R2-141614 SeNB Failure Reporting; NSN, Nokia Corporation; Disc;
[Moved from 7.1.3 to 7.1.2]

All 12 Tdocs above not treated

PDCP and Flow Control

R2-141544 PDCP reordering in dual connectivity; Ericsson; Disc;
=> revised in R2-141760

R2-141760 PDCP reordering in dual connectivity Ericsson Disc
Proposal 1:
- LG thinks that the re-ordering should be performed directly upon reception from lower layers. The version shown in this document would attempt to perform header compression before re-ordering. If RoHC receives packets in the same order the reordering context gets erroneous. NSN thinks that the LG proposal is also introducing problems since e.g. burst deciphering would occur. NSN also thinks that the LG proposal could lead to HFN de-sync. NSN thinks that RoHC is not so essential for AM bearers. Samsung thinks that the details can be discussed in the stage-3 phase.
- After offline discussion most companies seem to intend to support RoHC unless significant problems are identified. More complexity in specification should not be considered as much a problem as e.g. complexity in UE implementation. Companies also mentioned that in some cases even VoIP might need to be routed via the split RLC AM bearer. Most companies also agreed that we should not change legacy behaviour on MCG bearers. Changes to the specification shall be minimized.

=> RAN2 intends to support RoHC on split bearers unless significant problems are identified. More complexity in specification should not be considered as much a problem as e.g. complexity in UE implementation. We should not change legacy behaviour on MCG and SCG bearers. The transition time needs further investigation. Changes to the specification shall be minimized.

=> Burst delivery of packets from reordering to the deciphering entity in the UE is not considered an issue since RLC AM may show the same behaviour already today.

=> The PDCP transmitter should not bring more than half the sequence number space in flight in order to avoid HFN de-sync. (as in legacy behaviour).

Agreements

1 The SeNB provides to the MeNB PDCP SNs of the successfully delivered PDCP PDUs (based on RLC AM state in SeNB) among the ones that it received from the MeNB.

- FFS which PDCP PDU SN(s) exactly to report based on what trigger (all delivered or only a subset)

=> CB: [LTE/DC] A draft LS to RAN3 to inform them about the need to inform the MeNB of the delivered PDCP SN can be provided in R2-141832 (Ericsson)

R2-141832 draft LS on the need to inform the MeNB of the delivered PDCP SN; to RAN3; Contact: Ericsson

=> Add a sentence that the details require further discussions in RAN2 (See FFS above).

=> Add that "RAN2 has not discussed whether there is a need for the SeNB to inform the MeNB about PDCP PDUs it has received via X2 but not delivered via Uu to the UE. "

=> Remove "when introducing X2 procedures for dual connectivity and flow control"

✓ => With these changes the LS on the need to inform the MeNB of the delivered PDCP SN is approved in R2-141850

R2-141397 PDCP buffer management and PDCP SDU recovery; Samsung; Disc;
R2-141125 Discussion on interworking between PDCP and RLC; ZTE; Disc;
R2-141177 PDCP reordering after SeNB release; NSN,Nokia Corporation; Disc;
R2-141178 PDCP window handling for Dual connectivity; NSN, Nokia Corporation; Disc;
R2-141201 PDCP reordering for split bearer; Intel Corporation; Disc;
R2-141246 PDCP status report in dual connectivity; Fujitsu; Disc;
R2-141282 Services between PDCP and RLC for a split bearer; NEC; Disc;
R2-141290 Support of PDCP reordering and flow control for DL split bearer; Huawei, HiSilicon; Disc;
R2-141325 PDCP Reordering for Split Bearer; LG Electronics Inc.; Disc;
R2-141327 Introduction of dual connectivity in PDCP; LG Electronics Inc. (PDCP Rapporteur); CR; 36.323; B;
R2-141384 PDCP status report via X2 in UP 3C; Pantech; Disc; revision of Tdoc R2-140254;
R2-141396 PDCP reordering for 3C bearer; Samsung; Disc;
R2-141507 Discussion on the remaining PDCP issues in support of 3C; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141664 PDCP reordering with split bearers; Broadcom Corporation; Disc;
[Moved from 7.1.4 to 7.1.2]

R2-141711 Delivery report from SeNB to MeNB; NTT DOCOMO, INC.; Disc;
R2-141745 Radio bearer reconfiguration and PDCP operation in dual connectivity; HTC; Disc;
All 16 Tdocs above not treated

Special SCell

R2-141166 Special SCell in dual connectivity; Huawei, HiSilicon; Disc;
R2-141202 Special SCell functionality in dual connectivity; Intel Corporation; Disc;
R2-141511 Discussion on the Special Scell (SPcell) change procedure; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141674 SeNB special cell functionality for dual connectivity; Qualcomm Incorporated; Disc;
R2-141353 Definition of the Special Cell for SCE with Dual Connectivity; InterDigital Communications; Disc;
R2-141354 Characteristics of the Special Cell for SCG with Dual Connectivity; InterDigital Communications; Disc;
R2-141425 On special SCell for dual connectivity; LG Electronics Inc.; Disc;
All 7 Tdocs above not treated

Other

R2-141336 Handling of MAC entities for dual connectivity; LG Electronics Inc.; Disc;
R2-141163 Radio bearer configuration and switch in dual connectivity; Huawei, HiSilicon; Disc;

R2-141220 Discussion on bearer type switch in dual connectivity; Fujitsu; Disc;
R2-141283 Other Inter-node RRC messages for DC; NEC; Disc;
R2-141285 Signalling the SCG configuration to the UE; NEC; Disc;
R2-141382 Reestablishment in dual connectivity; Pantech; Disc;
R2-141389 Selection of dual connectivity U-plane architecture; Kyocera; Disc;
R2-141335 Random Access at SCG SCell addition; LG Electronics Inc.; Disc;
R2-141380 Dual connectivity initiation; Kyocera; Disc;
[Moved from 7.1.4 to 7.1.2]

R2-141500 UE AMBR coordination in dual connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141576 Re-establishment during Dual connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141578 SeNB DRB handling during re-establishment; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141630 Synchronization for SeNB Addition/Modification; NTT DOCOMO, INC.; Disc;
All 13 Tdocs above not treated

Late or withdrawn
R2-141159 Power control and UL split; Ericsson; Disc;
[Withdrawn]

R2-141548 Considerations on SCG Release Issue; CATT; Disc;
[Withdrawn]

R2-141508 Discussion on the RB reconfiguration in dual connectivity system; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
[Withdrawn]

R2-141303 SCG Failure Reporting in Dual Connectivity; Hitachi Ltd.; Disc;
[Withdrawn]

R2-141330 On handling SFN for Dual Connectivity; Samsung; Disc;
[Withdrawn]

7.1.3 Control Plane Details

Security aspects
R2-141158 DRB ID management for security in dual connectivity; Huawei, HiSilicon; Disc;
-

Agreements

1 Split bearer is assigned by MeNB the same DRB ID on MeNB and SeNB.

2 MeNB assigns DRB ID to MCG bearer, SCG bearer, or split bearer from a common DRB ID pool so that DRB IDs are unique for a UE.

R2-141835 draft reply LS on DRB ID management for Dual Connectivity; to SA3; Contact: Huawei;
=> revised in R2-141843
R2-141843 draft reply LS on DRB ID management for Dual Connectivity; to SA3; Contact: Huawei
=> Withdrawn
=> Covered by Email discussion covering more SA3 requests

R2-141501 Key refresh in dual connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141126 Discussion on security issue of split bearer; ZTE; Disc;
R2-141203 Security aspects for dual connectivity; Intel Corporation; Disc;
R2-141264 Security issue in Dual Connectivity; Panasonic; Disc;
R2-141545 Open issues in security of dual connectivity; Ericsson; Disc;
R2-141603 Some security aspects of dual connectivity; Samsung; Disc;
R2-141624 Security aspects for SeNB addition and key change; NEC; Disc;
All 7 Tdocs above not treated

RRC Signalling details
Support synchronized RRC Reconfiguration (intra-cell MeNB handover) without releasing SCG?
Handling of sCellIndex?
Support parallel SCG Reconfiguration?
R2-141533 Some open issues on RRC; Ericsson; Disc;
R2-141532 Dual Connectivity, RRC signalling on Xn and Uu; Samsung; Disc;
R2-141534 Introduction of Dual Connectivity; Samsung; CR; 36.331; B;
R2-141546 Considerations on Parallel SCG Configuration; CATT; Disc;
R2-141123 Discussion on RRC signaling; ZTE; Disc;
R2-141175 RRC signaling for SCG release; Intel Corporation; Disc;
R2-141421 How to allocate sCellIndex in DC; LG Electronics Inc.; Disc;
[Moved from 7.1.2 to 7.1.3]

R2-141474 On RRC design for Dual Connectivity; Broadcom Corporation; Disc;
R2-141575 DRBid handling for Architecture 1A; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
[Moved from 7.1.2 to 7.1.3]

All 9 Tdocs above not treated

RRM Measurements
Single measurement gap applied to MeNB and SeNB? Or allow different gaps and correspondingly enhanced capabilities?
Align gaps across MeNB and SeNB? If so, how to acquire SFN offset in eNBs and UE?
Need for new measurement events to manage SCG cells?
Need to increase the number of measurement IDs?
R2-141236 Measurement gap configuration in Dual Connectivity; NTT DOCOMO, INC.; Disc;
R2-141616 RRM measurements for Dual Connectivity; NSN, Nokia Corporation; Disc;
R2-141107 Measurement report triggering for Dual Connectivity; CMCC, CATT; Disc;
R2-141289 Discussion on RRM measurements for SCG in dual connectivity; Huawei, HiSilicon; Disc;
[Moved from 7.1.2 to 7.1.3]

R2-141284 Measurement report triggering for Dual Connectivity; Broadcom Corporation; Disc;
[Moved from 7.1.2 to 7.1.3]

R2-141400 Discussion on measurement gap in dual connectivity; Samsung; Disc;
[Moved from 7.1.2 to 7.1.3]

R2-141558 Measurement Gap Issues for Dual Connectivity; CATT; Disc;
R2-141599 Measurement gap configuration for Dual Connectivity; Broadcom Corporation; Disc;
[Moved from 7.1.2 to 7.1.3]

All 8 Tdocs above not treated

Reconfiguration Failure
R2-141109 Re-configuration failure in dual connectivity; CMCC; Disc;
[Moved from 7.1.2 to 7.1.3]

R2-141570 RRC Reconfiguration Failure; CATT; Disc;
All 2 Tdocs above not treated

UE Capabilities
R2-141709 Discussion on DC capability structure; NTT DOCOMO, INC.; Disc;
R2-141748 Discussion on DC capability structure; NTT DOCOMO, INC.; Disc; revision of R2-141709;
R2-141710 draft LS on Dual Connectivity capability; NTT DOCOMO, INC.; LSout; related to R2-141709;
R2-141749 draft LS on Dual Connectivity capability; NTT DOCOMO, INC.; LSout; related to R2-141748; revision of R2-141710;
R2-141675 Handling of Layer 1 processing capability; Qualcomm Incorporated; Disc;
All 5 Tdocs above not treated

Late or withdrawn
R2-141566 RRC Reconfiguration Failure; CATT; Disc;
[Withdrawn]

R2-141569 RRC Reconfiguration Failure; CATT; Disc;

[Withdrawn]

R2-141539 Synchronization of the RRC configuration in the SeNB; Ericsson; Disc; [Late]

R2-141124 Discussion on security issue of 1A architecture; ZTE; Disc; [Late]

All 4 Tdocs above not treated

7.1.4 User Plane Details

Documents in this agenda item are planned to be treated in the UP session. See Annex G.

Further details of BSR, LCP, activation/deactivation, Random access and DRX, PHR?

R2-141552 DRX interaction between MeNB and SeNB; CATT; Disc;
R2-141556 LCP procedure for dual connectivity; CATT; Disc;
R2-141563 Remaining issue of BSR reporting; CATT; Disc;
R2-141337 Supporting SPS in SCG SCells; LG Electronics Inc.; Disc;
R2-141339 Supporting TTI bundling in dual connectivity; LG Electronics Inc.; Disc;
R2-141340 TAG management for dual connectivity; LG Electronics Inc.; Disc;
R2-141547 Modelling of MAC for dual connectivity; Ericsson; Disc;
R2-141550 Introduction of dual connectivity in MAC; Ericsson; CR; 36.321; B;
R2-141553 BSR procedures for split bearers; Ericsson; Disc;
R2-141554 Power headroom report for Dual Connectivity; Ericsson; Disc;
R2-141108 SPS support in SeNB; CMCC; Disc;
R2-141117 Discussion on UP issues related to uplink split; ZTE; Disc;
R2-141119 Discussion on RACH issue on SeNB; ZTE; Disc;
R2-141120 UL Time Alignment for Dual Connectivity; MediaTek Inc.; Disc;
R2-141122 Scheduling Request for Small Packet; MediaTek Inc.; Disc;
R2-141153 BSR generation procedure for UL bearer split; Huawei, HiSilicon; Disc;
R2-141154 Enhancement of LCP procedure for dual connectivity; Huawei, HiSilicon; Disc;
R2-141155 PHR Operation in Dual Connectivity; Huawei, HiSilicon; Disc;
R2-141156 SPS in dual connectivity; Huawei, HiSilicon; Disc;
R2-141157 Remaining issues of random access in dual connectivity; Huawei, HiSilicon; Disc;
R2-141160 DRX configuration alignment; Ericsson; Disc;
R2-141161 Handling of cell Activation/Deactivation in Dual connectivity; Ericsson; Disc;
R2-141162 Time alignment for Dual Connectivity; Ericsson; Disc;
R2-141179 PHR for dual connectivity; NSN, Nokia Corporation; Disc;
R2-141180 SPS and TTI Bundling for Dual Connectivity; NSN, Nokia Corporation; Disc;
R2-141181 SCG Cell scheduling and activation; NSN, Nokia Corporation; Disc;
R2-141199 Discussion on PHR triggering for Dual Connectivity; KDDI Corporation; Disc;
R2-141204 BSR Transmission for Dual Connected UEs; Intel Corporation; Disc;
R2-141205 DRX alignment for dual connected UEs; Intel Corporation; Disc;
R2-141206 PHR for Dual Connectivity; Intel Corporation; Disc;
R2-141207 SPS and TTI bundling support in dual connectivity; Intel Corporation; Disc;
R2-141208 Logical channel prioritization in dual connectivity; Intel Corporation; Disc;
R2-141238 Disscussion on PHR of small cell; ZTE; Disc;
R2-141260 Uplink transmission power management and PHR reporting for dual connectivity; Panasonic; Disc;
R2-141338 Remaining issues on Activation/Deactivation for Dual connectivity; ITL Inc.; Disc;
R2-141346 BSR for Bearer Split; ITRI; Disc;
R2-141395 SPS and TTI bundling in dual connectivity; Samsung; Disc;
[Moved from 7.1.2 to 7.1.4]

R2-141466 The format of Activation MAC Control Element for Dual Connectivity; ASUSTeK; Disc;
R2-141478 Power headroom report for dual connectivity; Samsung; Disc;
R2-141482 Logical channel prioritization; Samsung; Disc;
R2-141487 Activation and deactivation for dual connectivity; Samsung; Disc;
R2-141504 SPS in split mode; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;

R2-141505 Discussion on LCP for dual connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141509 Discussion on message 3 content for contention-based RACH on SeNB; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141510 PHR enhancement to support Dual Connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141562 DRX coordination in Dual Connectivity; NEC; Disc;
R2-141565 Activation and deactivation handling for SCG cells; Sharp; Disc;
R2-141615 Consideration of BSR and SR for Dual Connectivity; Fujitsu; Disc;
R2-141632 DRX coordination for dual connectivity; Nokia Corporation, NSN; Disc;
R2-141680 Logical channel prioritization for dual connectivity; Qualcomm Incorporated; Disc;
R2-141682 UE maximum power and power headroom considerations in dual connectivity; Qualcomm Incorporated; Disc;
R2-141684 SPS and TTI bundling for dual connectivity; Qualcomm Incorporated; Disc;
R2-141687 DRX for dual connectivity; Qualcomm Incorporated; Disc;
R2-141712 Framework for TAG in Dual Connectivity; NTT DOCOMO, INC.; Disc;
[Moved from 7.1.2 to 7.1.4]

R2-141182 [DRAFT] LS on Activation/deactivation for Dual Connectivity; NSN; LSout;
R2-141401 Discussion on SCG random access; Samsung; Disc;
R2-141402 How to capture DC in the MAC specification; Samsung; Disc;
R2-141403 Discussion on PBR handling for 3C bearer; Samsung; Disc;
R2-141404 Discussion on MAC functions in dual MAC; Samsung; Disc;
R2-141405 Discussion on mapping between logical channel and transport channel in dual MAC; Samsung; Disc;
R2-141406 Scheduling Request in Dual Connectivity; Samsung; Disc;
R2-141385 Issue on preventing power scaling down; Pantech; Disc;
R2-141351 Dual Connectivity Power Headroom Reporting; InterDigital Communications; Disc;
R2-141422 PHR trigger with dual connectivity; LG Electronics Inc.; Disc;
R2-141424 BSR trigger with uplink bearer split; LG Electronics Inc.; Disc;
R2-141485 DRX Configuration & Alignment in Dual Connectivity; Samsung Electronics; Disc;

Late or withdrawn
R2-141237 Disscussion on PHR of small cell; ZTE; Disc;
[Withdrawn]

R2-141408 Discussion on PBR handling for 3C bearer; Samsung; Disc;
[Withdrawn]

7.1.5 Other

No Cotributions under this AI.

7.2 WI: Small Cell Enhancements – Physical Layer

(LTE_SC_enh_L1-Core, leading WG: RAN1, REL-12, started: Dec.13, target: Jun.14, WID: RP-132073)
Time Budget: 0,5 TU in RAN2-85bis.
Stage-2 description/aspects of "cell on/off" and "DRS based RRM measurements".

Open issues:
Can existing RRM measurements be re-used? Depends on whether DRS is CRS or CSI-RS based?
Can CRS and DRS measurements be compared? Can CRS measurements be compared to CSE-RS measurements?
Does the UE perform DRS and CRS measurements on the same carrier? Are all cells assumed to provide DRS?
Does the UE need to measure the (rare) DRS also while in DRX (since there might be no DRS in its on duration)?

R2-141165 RAN2 considerations on small cell on/off and discovery; Huawei, HiSilicon; Disc;
- MediaTek thinks that in Figure 3 there is actually no need for an explicit switch on request from source to target. The target could just switch on when receiving the HO preparation

request from source eNB. DCM thinks so to. Huawei think it could be modelled in different ways.

- DCM thinks that the main benefit of on/off is energy saving and the measurements might not be that accurate. Broadcom thinks that the second aspect is the interference reduction.
- ZTE thinks that the measurement performance requirements are supposed to be almost as good as for existing CRS. Therefore the impact to RAN2 is small.
- Broadcom thinks we need to ensure that the UE can measure the rarely occurring DRS.
- Broadcom thinks we need to determine whether the UE may be connected to a cell that is off. Broadcom thinks then the DRX of the UE would need to be aligned with the DRS occasions of the cell.
- NSN thinks we wish that we could re-use the RRM measurement framework but actually we cannot decide that before knowing what RAN1 decides for the DRS. Ericsson also thinks that it is difficult to progress but maybe we should agree that we re-use the existing measurement framework as baseline.
- QC thinks it is not yet so clear whether the mechanism would e.g. be applicable to the special SCell in case of DC. Huawei agrees that it is still under discussion.
- Chairman wonders whether a UE can be connected to a dormant cell as PCell. Huawei does not think so. Ericsson does not think so either since there is no PDCCH.
- Samsung thinks we should discuss how many states we have and in which state a UE may use such cells. Samsung does not want to define new states but understand e.g. whether a special SCell can be dormant. But Samsung thinks that it might be too early given the lack of agreements in RAN1.

Agreements

1 RAN2 agrees that no new idle mode UE behaviour is expected for small cell on/off in Rel-12.

R2-141244 Control plane impacts of small cell DTX; Broadcom Corporation; Disc;
R2-141234 Stage-2 description of small cell on/off and discovery; Huawei, HiSilicon; CR; 36.300; B;
R2-141115 Small Cell On and Off; MediaTek Inc.; Disc;
R2-141116 DRS RRM Measurement; MediaTek Inc.; Disc;
R2-141192 Discussions on small cell ON-OFF and new reference signal; CATT; Disc;
R2-141209 Small cell on/off and discovery; Intel Corporation; Disc;
R2-141230 Handling RRC Idle mode and Legacy UEs with small cell DTX; Broadcom Corporation; Disc;
R2-141377 Discussion on Small Cell ON/OFF and Discovery; ZTE; Disc;
R2-141515 Cell on/off and support for off cell measurement; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141602 Small Cell Enhancements - Issues to consider; Motorola Mobility; Disc;
R2-141618 Small cell on/off impacts to measurements; NSN, Nokia Corporation; Disc;
R2-141628 Small cell on/off measurements and signalling; NEC; Disc;
R2-141633 Overview of Small Cell On/Off and Discovery; Ericsson; Disc;
R2-141657 DRS Design Requirements; Samsung; Disc;
R2-141663 Scenarios and Cell States for Small Cell On/Off and Discovery; Samsung; Disc;
All 15 Tdocs above not treated

7.3 WI: Further MBMS Operations Support for E-UTRA

(MBMS_LTE_OS-Core, leading WG: RAN2, REL-12, started: Sep.13, target: Jun.14, WID: RP-140282)
Time Budget: 0,5 TU in RAN2-85bis

7.3.1 General

Primarily for LSs and running CRs

No Cotributions under this AI.

7.3.2 Stage-2

Collect measurements in IDLE? Support Immediate MDT?
How to configure MBSFN MDT logging? Dedicated signalling? MCCH? SIB? Always on?
Reporting similar to logged measurement reporting? Re-use same report/request messages?
Does the UE verify user consent?
Including output of [85#23][LTE/MBMS-MDT] Analyse further issues of MBMS MDT (QC)

R2-141231 Analyse further issues of MBMS MDT; Qualcomm Incorporated; Disc; result of email discussion [85#23][LTE/MBMS-MDT];

Proposal 1 and 2:

- Samsung wonders whether Logged MDT in Connected is really needed. Samsung thinks it would also require the UE to include non-MDT related measurements if we base the reporting on the existing messages. There are several stage-3 changes needed to do that. Therefore, Samsung would only want to do that if RAN2 is sure that there is a real need. ALU agrees with Samsung. CATT thinks it would simplify the UE behaviour since it does not need to take into account whether the UE is in IDLE or CONNECTED. Intel would agree with Samsung if we were about to extend regular MDT to logged but that is not the intention. MediaTek agrees with Samsung that details would need to be discussed. E.g. provisioning of location information is currently quite different between connected and idle mode MDT. Nevertheless, MediaTek thinks it could be doable. ALU wonders still whether there is really a need. Huawei thinks it depends a lot on how the NW handles UEs with respect to IDLE/CONNECTED. Huawei expects that in smaller cells it is likely that the NW keeps UEs connected often for a long time. Intel thinks that MBMS reception must be able to continue irrespective of IDLE or CONNECTED and consequently the UE could also continue capturing measurements. Ericsson agrees with Intel. Ericsson thinks that in signalling based MDT it could be more important than for management based. QC thinks that also from quality of measurement it would be desirable to log continuously. Nokia does not share that view. Samsung would suggest to focus on IDLE mode.

Proposal 3:

- MediaTek thinks that we have management and signalling based MDT. MediaTek thins that for both we can have area restrictions. Therefore, MediaTek wonders how that relates to this proposal which seems to hint that with this agreement we support only management based. QC wanted to suggest to support management based MDT first.

Proposal 4/5:

- MediaTek thinks that we used dedicated configuration e.g. since only the NW knows the user consent. Secondly, there could be an impact on the user and the NW should have the possibility to decide per user whether or not a UE is supposed to perform MDT. Therefore, we decided earlier to support only dedicated configuration even though it was not always the most resource efficient way. MediaTek suggests to stick to this principle. CATT thinks the problem here is that the NW does not know whether the UE can/will perform MBMS measurements. Intel agrees that the user consent needs to be looked at and that it comes from the NW but Intel thinks we could still go for MCCH based configuration. Samsung thinks the NW today orders a number of UEs to do logging but then the UE may go to another area where it should not do logging. The NW cannot predict reliably whether a UE will provide some useful measurements. Still we decided that dedicated signalling is good. MediaTek agrees and thinks that we had the principle that the RAN selects the UE and if it needs further information we can discuss how it gets it. For MBMS the interest indication could be useful.
- QC thinks that e.g. in a stadium the NW would need to configure thousands of UEs by DCCH. MediaTek thinks that the NW could e.g. configure all MBMS MDT capable UEs during TAU. Huawei thinks that requesting the UEs early might not be feasible since the trace information is not yet available. MediaTek thinks that unless the benefits of MCCH are huge, we should stick to the current design. QC thinks that we should go for the most signalling efficient solution which is MCCH. Samsung agrees with MediaTek that we should start with the existing baseline. Samsung does not agree with QC that MCCH is necessarily the best in all aspects. Huawei wonders how DCCH would work in terms of finding applicable UEs. MediaTek thinks we should not start with a signalling optimization. Verizon thinks that in a stadium one would like to configure all UEs with MCCH. MediaTek thinks that DCCH would still work. Ericsson appreciates input from operators but would also like to understand whether we need signalling based MDT. Ericsson also sees that

MCCH would reduce the configuration load on the NW. MediaTek thinks that MCCH would reduce the control signalling but do we know that we have a signalling problem. Ericsson does think that we should keep dedicated signalling if easily possible. CATT thinks we could support both. NSN thinks that the case with low population is probably the most difficult since one might not get enough samples. NSN would consider it easier to support DCCH. NSN thinks that the interest indication could provide very good input to the NW to find the (sometimes few) UEs receiving a certain MBMS service. Then, DCCH is no less efficient than MCCH. QC thinks we could support both since.

- MediaTek has not seen any compelling reasons for introducing a new configuration mechanism and can therefore not agree to MCCH in this meeting. Samsung thinks that DCCH based mechanism should be the baseline unless we see that it is really not working. Samsung thinks that even if we use MCCH we still might need dedicated signalling to verify the user consent. QC wonders how the NW forces the UEs to connect in order to get the interest indication and to configure by DCCH. Samsung thinks that it could just be done a while before. MediaTek thinks that the big load comes from measurement reporting but not from the configuration. Intel indicated MCCH as preference but they would also be OK to go for DCCH as baseline. Ericsson thinks that at high load the NW can decide not to fetch the report when the load is currently high.
- Verizon can see benefits for both options and wonders whether we could try to support both. Ericsson thinks that the user consent can be sent to the UEs so that they have this information.

Proposal 6:

- Ericsson wonders whether we want to support signalling based MDT. If not, Ericsson would be OK to use MCCH. If we want to support signalling based, Ericsson would like to avoid multiple mechanisms. Intel tends to agree that if we get signalling based we should stick with DCCH configuration and not introduce MCCH as well. LG also agrees and would also like to use common configuration for signalling and management based MDT. CMCC thinks that signalling based MDT should not be excluded. MediaTek thinks we should not exclude signalling based MDT unless we have a strong reason to do so. Samsung thinks we already agreed that we should support signalling based MDT.
- Ericsson thinks that if we go to support signalling based MDT, we should stick to DCCH. Otherwise, Ericsson would prefer MCCH. Verizon thinks we could deprioritize the signalling based MDT. MediaTek thinks that we should exclude things that we have in place.

Agreements

2 Immediate MDT for MBSFN is not supported in Rel-12.

1 RAN2 intends to support logged MDT for MBSFN measurements in RRC_CONNECTED. The final decision is to be taken based on stage-3 details.

3 We use DCCH based configuration as baseline.
3a If time permits, we can try to support MCCH based configuration as well

✉ **[LTE/MBMS-MDT] Email discussion [85bis#16] eMBMS measurements for Logged MDT Stage-2 (MediaTek) until next meeting**
-Aim to provide 37.320 CR capturing the agreements made so far
=> Intended outcome: Draft 37.320 CR for RAN2-86

✉ **[LTE/MBMS-MDT] Email Discussion [85bis#17] eMBMS measurements for Logged MDT (QC) until next meeting**
-Progress stage-3 work according to agreements from this meeting
-Aim to provide 36.331 CR using R2-141536 as baseline
=> Intended outcome: Email discussion summary and a draft 36.331 CR for RAN2-86

R2-141655 Support of MBMS MDT; Huawei, HiSilicon; Disc;
R2-141535 Introducing eMBMS measurement; Samsung; Disc;

R2-141536 Introducing eMBMS measurement by extension of logged measurements; Samsung; CR; 36.331; B;
R2-141233 MBSFN Measurement for MDT; Qualcomm Incorporated; CR; 36.331; B;
R2-141747 MBMS use case definition; Mediatek Inc; Disc; Disc on possible text for TS 37.320;
R2-141232 Proposed way forward on MBSFN MDT; Qualcomm Incorporated; Disc;
R2-141089 Measurement configuration for Logged MDT; ZTE; Disc;
R2-141454 Restriction on the number of MBSFN areas to be measured by UE; LG Electronics Inc.; Disc;
R2-141455 Selective MBMS MDT configuration; LG Electronics Inc.; Disc;
R2-141457 Verification of MBSFN actual signal reception; LG Electronics Inc.; Disc;
R2-141458 Repetition of MBMS MDT configuration message via BCCH or MCCH; LG Electronics Inc.; Disc;
R2-141489 eMBMS measurements and Procedures in MDT; Ericsson; Disc;
R2-141543 How to Configure MBSFN MDT; CATT; Disc;
R2-141607 Area configuration for MBSFN measurements; NSN, Nokia Corporation; Disc;
R2-141610 Immediate MDT support for MBSFN measurement; NSN, Nokia Corporation; Disc;
R2-141608 Options for MBSFN measurement configuration; NSN, Nokia Corporation; Disc;
R2-141604 Draft LS on MDT support for MBSFN measurements; NSN, Nokia Corporation; Disc;
R2-141742 Reuse of MDT for MBMS; Mediatek Inc; Disc;
R2-141270 Discussion of user consent for MBMS MDT; Intel Corporation; Disc;
=> revised in R2-141750
R2-141750 Discussion of user consent for MBMS MDT; Intel Corporation; Disc; revision of R2-141270;
All 20 Tdocs above not treated

7.4 WI: LTE Device to Device Proximity Services - Radio Aspects

(LTE_D2D_Prox-Core, leading WG: RAN1, REL-12, started: Mar.14, target: Sep.14, WID: RP-140518)
RAN1 TR 36.843 on D2D
Time Budget: 3 TU in RAN2-85bis

7.4.1 General

Mainly for LSs and running CRs.

Incoming LSs

R2-141046 Response LS to S3-131152 = R2-140024 on parameter synchronization (R1-140941; contact: Qualcomm); RAN1; LSin; cc: RAN2;
=> Noted
R2-141845 LS (R1-140941) on parameter synchronization from SA3; Contact: QC
[Late]

- NSN wonders why they mention UTC. QC thinks that it is since it was indicated earlier that SIB16 exists.

=> Noted

R2-141047 Reply LS to S2-140560 = R2-140810 on ProSe Out of Coverage discovery (R1-140950; contact: Ericsson); RAN1; LSin; cc: RAN2;
=> Noted
R2-141055 LS on Text Proposal for TR 36.843 (R3-140490; contact: Qualcomm); RAN3; LSin; to: RAN2;
=> Noted
R2-141062 LS on Provisioning of ProSe configuration information in a public safety ProSe enabled UE (S2-140847; contact: Deutsche Telekom); SA2; LSin; LS02; to: RAN2;

- Ericsson thinks that the decision is unfortunate and the RAN should have the possibility to provide parameters and override the UICC. Intel wonders what the reason for this agreement was. DT thinks they SA2 assumes that by using UICC the UE may be able to be provisioned with configurations for multiple PLMNs.

=> Will discuss related documents in resource allocation and decide whether and what to reply.

R2-141830 LS on identifier in scheduling assignment for D2D communication; from RAN1

- LG wonders whether we still need to filter also on MAC layer. Intel thinks that the ID on L1 might not be long enough. Ericsson agrees with Intel.

=> Noted

R2-141837 LS to RAN2 on D2D resource allocation Modes 1&2; From RAN1
=> Noted

Outgoing LSs
R2-141263 DRAFT Reply LS on Provisioning of ProSe configuration information in a public safety; Ericsson; LSout; LS02; Draft LS answer to R2-141062 (S2-140847);
not treated

Running CR
R2-141838 Introduction of ProSe in 36.300; QC

✉ **[LTE/D2D] One week email discussion [85bis#02] to endorse a running 36.300 CR (QC)**
-Based on draft CR in R2-141838
=> Intended outcome: Endorse running 36.300 CR

✉ **[LTE/D2D] Email discussion [85bis#18] User plane aspects of D2D Communication (QC) until next meeting**
=> Intended outcome: Email discussion report

✉ **[LTE/D2D] Email discussion [85bis#19] Resource allocation details for D2D Communication (Ericsson) until next meeting**
-Further details based on the agreements made so far
-Progress e.g. the mode selection
-Take into account progress in RAN1.
=> Intended outcome: Email discussion report

7.4.2 D2D Communication

Focus on Stage-2: Basic Flows and Radio signalling aspects.

Resource allocation
How to transition between the coverage states and resource allocation modes?
How to configure the reception resource pool? SIB? Dedicated? Pre-configuration? Relayed by other UEs?
How to configure the transmission resource pool for Mode2? SIB? Dedicated? Pre-Configured? Relayed by other UEs?
R2-141683 Definitions of coverage states and mode switching for D2D Communication; Qualcomm Incorporated; Disc;
-

Agreements

1 A UE is considered in-coverage if it has a serving cell (CONNECTED) or is camping on a cell (IDLE).

2 If a UE is out of coverage it can only use mode 2.

3 If a UE is in coverage it may use mode 2 if the eNB configures it accordingly.

4 If a UE is in coverage it may use mode 1 if the eNB configures it accordingly.
4a If the UE is instructed to use mode 1, there may be exceptional cases where the UE is allowed to use mode 2 temporarily (criteria are FFS (e.g. if UE fails to establish an RRC connection….))
4b We intend to define the exceptional cases rather than an edge-of-coverage “state”.

R2-141609 Resource Pool Configuration for D2D Communication; General Dynamics; Disc;
- NSN and Ericsson wonder whether security issues have been considered by RAN1. QC and Samsung think that also PDCCH is not secured (only scrambled).
- NSN thinks that we should maybe wait for the detailed agreements made in RAN1 before continuing on resource configuration.

R2-141834 Way forward on D2D communication; Ericsson
- Ericsson explains that the proposals should replace the working assumption and be captured as agreement.

> Observation 1 All UEs (i.e. both in and out of coverage) should monitor an SA resource pool which is the union of the SA resource pools used for SA transmission in all cells and SA transmission out of coverage.
> Observation 2 Out of coverage UEs can transmit on an SA resource pool which is known to the UE.
> Observation 3 In coverage UEs can transmit on an SA resource allocated by the eNB if Mode 1 is used. If Mode 2 is used then the UEs can transmit on an SA resource pool known to the UE.
>
> **Agreements**
>
> 1 The SA resource pool used for monitoring when the UE is out of coverage is pre-configured.
> 2 As baseline, the SA resource pool used for transmission when the UE is out of coverage is pre-configured.
> 3 SA resource pool used for monitoring when the UE is in coverage is configured by the eNB via RRC, dedicated or broadcasted
> 4 The SA resource pool used for transmission when the UE is in coverage is not known to the UE if Mode 1 resource allocation is used. Instead the eNB schedules the resource to use for SA transmission. The resource assigned by the eNB is within the SA resource pool for reception provided to the UE.
> 5 The SA resource pool used for transmission when the UE is in coverage is configured by the eNB via RRC if Mode 2 resource allocation is used (FFS if dedicated or broadcasted).

R2-141658 Resource pool configuration for Mode 2 UE; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141256 Layer 2 procedures for D2D Communication; Ericsson; Disc;
R2-141133 Resource allocation for Mode-1; Samsung; Disc;
R2-141134 Resource allocation for Mode-2; Samsung; Disc;
R2-141136 Resource pool configuration; Samsung; Disc;
R2-141137 Handling of connection failure; Samsung; Disc;
R2-141196 D2D Communication Resource Allocation Mode2; CATT; Disc;
R2-141223 Resource allocation signaling for D2D communication; Intel Corporation; Disc;
R2-141261 Seamless switching of D2D transmission modes; Ericsson; Disc;
R2-141300 D2D Resource Allocation Mode Selection; Sony; Disc;
R2-141375 eNodeB control of UE transmission mode for D2D Communication; NSN, Nokia Corporation; Disc;
R2-141473 Procedure for Mode 1 D2D communication; ETRI; Disc;
R2-141483 Resource pools for D2D communication; ZTE; Disc;
R2-141486 Out of coverage detection and service continuity; ZTE; Disc;
R2-141528 Scheduling Options for D2D Communication; LG Electronics Inc.; Disc;
R2-141634 Multiplexing between cellular and D2D communications; InterDigital Communications; Disc; RP-140518;
R2-141659 Mode 2 transmission UE for D2D communication; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141685 eNB resource allocation for D2D broadcast communication; Qualcomm Incorporated; Disc;
R2-141686 Details of Scheduling Assignment for D2D broadcast communication; Qualcomm Incorporated; Disc;
R2-141695 Mode Selection and Resource Pool Selection for D2D; InterDigital Communications; Disc;
R2-141714 Applicable RRC state for mode2; LG Electronics Inc.; Disc;
R2-141715 Basic configuration and signaling; LG Electronics Inc.; Disc;
R2-141716 Resource coordination for partial coverage; LG Electronics Inc.; Disc;
R2-141717 Resource pool structure; LG Electronics Inc.; Disc;

R2-141718 Resource pool usage when entering coverage; LG Electronics Inc.; Disc;
R2-141719 Immature out-of-coverage declaration; LG Electronics Inc.; Disc;
R2-141721 Synchronization Reference UE selection; LG Electronics Inc.; Disc;
R2-141733 Radio link problem for ProSe communication; Institute for Information Industry (III); Disc; related to RP-140518;
All 28 Tdocs above not treated

User Plane

R2-141221 MAC functionalities for D2D communication; Intel Corporation; Disc;
R2-141639 Parameter Configuration for D2D Radio Bearers; Huawei, HiSilicon; Disc;
R2-141698 Layer 2 aspects for D2D communications; InterDigital Communications; Disc;
R2-141259 User plane issues for D2D communications; Ericsson; Disc;
R2-141195 D2D Communication Resource Allocation Mode1; CATT; Disc;
R2-141197 MAC functions for D2D communication; CATT; Disc;
R2-141222 BSR reporting for D2D communication; Intel Corporation; Disc;
R2-141225 User plane configuration for D2D communication; Intel Corporation; Disc;
R2-141328 Discussion on the D2D impacts on MAC layer; Huawei, Hisilicon; Disc;
R2-141332 Discussion on SR for D2D communication; Huawei, Hisilicon; Disc;
R2-141347 On ID Field in MAC Header for D2D Communication; ITRI; Disc;
R2-141376 RLC release in broadcast based D2D group communication; NSN, Nokia Corporation; Disc;
R2-141491 MAC PDU format for D2D communication; ZTE; Disc;
R2-141527 Scheduling Request for D2D Communication; LG Electronics Inc.; Disc;
R2-141740 Resource Allocation for Transmission over PC5 Interface; CEWiT; Disc;
All 15 Tdocs above not treated

Other

How to create source and destination IDs?
How to support inter-cell deployments? D2D indication from UE to NW? Prioritize reselection?

R2-141262 Identifiers and Addresses for D2D Communication; Ericsson; Disc;
- Samsung wonders whether all the effort is justified to go down from 2x48 to 2x32 bit.

Agreements

1 In case of group- and uni-cast, L2 will convert the higher layer ProSe ID address identifying the destination (UE, Group) into two bit strings of which one can be forwarded to L1 and used as L1 ID whereas the other is used as L2 destination address.

2 For broadcast L2 can indicate to L1 that it is a broadcast transmission. As baseline RAN2 assumes that this indication is a pre-defined L1 ID in the same format as for group- and unicast.

3 RAN2 has no preference for the L1 ID size. RAN2 sees no problem providing an ID of a size as indicated in the RAN1 LS (e.g. 8 or 16).

=> CB: [LTE/D2D] A draft reply LS on identifier in scheduling assignment for D2D communication to RAN1 can be provided in R2-141836; from RAN1 (Ericsson)

R2-141836 Draft reply LS on identifier in scheduling assignment for D2D communication; to RAN1; Contact: Ericsson

✉ **[LTE/D2D] One week email discussion [85bis#03] for approval of LS on L1 ID (Ericsson)**

=> after one week email discussion it was agreed

R2-141135 Mobility support for D2D communication; Samsung; Disc;
R2-141198 LTE network manage and continuously control for D2D; CATT; Disc;
[Moved from 7.4.4 to 7.4.2]

R2-141645 L2 Addresses for D2D communication; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141725 Consideration on authorization; LG Electronics Inc.; Disc;
R2-141744 RAN2 Considerations for Mode 1 Resource Allocation; Huawei, HiSilicon; Disc;
All 5 Tdocs above not treated

36.300 CRs

R2-141681 Stage 2 CR: Device to Device Communication; Qualcomm Incorporated, Samsung; CR; 36.300; B;
not treated

Late or withdrawn

R2-141374 Discussion on L2 target ID for D2D communication; NSN, Nokia Corporation; Disc;
[Late]

R2-141696 Layer 2 aspects for D2D communications; InterDigital Communications; Disc; related to RP-140434;
[Withdrawn]

R2-141738 Resource Allocation for Transmission over PC5 Interface; CEWiT; Disc;
[Withdrawn]

R2-141739 Resource Allocation for Transmission over PC5 Interface; CEWiT; Disc;
[Withdrawn]

R2-141751 UE states and Resource allocation for D2D Communication; Panasonic; Disc;

[Late]

All 5 Tdocs above not treated

7.4.3 Device discovery

Focus on Stage-2: Basic Flows and Radio signalling aspects.

Resource allocation

Type 1: Provide TX resource pool by SIB? How to ensure that non-authorized UEs don't use it or don't use it too frequently? Encrypt and require UEs to obtain key from NAS? Or provide resource pool only via dedicated signalling?
How to realize TX resource restrictions for Type 1 (e.g. lower/higher TX frequency depending on service/subscription)?
Type 2: Is it necessary to activate/deactivate the RRC resource allocation by PDDCH?
Should eNB provide inter-cell reception resources? Or should UE acquire it itself from other frequencies' SIB?

R2-141388 Signaling flows for Type 2B Resource Allocation; Samsung; Disc;
Proposal 2:
- ZTE thinks that the CN should just configure whether the UE is allowed to do D2D discovery. Whether the UE may use Type 1 or 2B should be up to the RAN to decide. Ericsson agrees with ZTE.

Proposal 3:
- Ericsson thinks that it is not necessary to support the case where the eNB supports 1 and 2B. ZTE agrees that this does not need to be supported.

Agreements

0 The eNB may provide D2D reception discovery resources in SIB. These may cover resources used for D2D transmission in this cell as well as resources used in neighbour cells. (Details FFS)

For UEs in IDLE…
1a The eNB may provide a Type 1 transmission resource pool in SIB. UEs that are authorized for D2D Discovery use these resources in IDLE.
1b The eNB may indicate in SIB that it supports D2D but does not provide transmission resources. UEs need to enter RRC Connected in order to request D2D transmission resources.

For UEs in CONNECTED…
2a A UE authorized to perform D2D discovery transmission indicates to the eNB that it

wants to perform D2D discovery transmissions and further information (FFS)

2b eNB validates whether UE is authorized for D2D discovery transmission using the UE context received from MME (pending RAN3 decision)

2c the eNB may configure the UE to use a Type 1 transmission resource pool or dedicated Type 2B transmission resources via dedicated signalling (or no resource) .

2d the resources allocated by the eNB are valid until a) the eNB de-configures them or b) the UE enters IDLE. (FFS whether resources may remain valid even in IDLE)

R2-141194 D2D Discovery resource allocation; CATT; Disc;
R2-141226 Resource allocation signaling for D2D discovery; Intel Corporation; Disc;
R2-141258 D2D discovery resource allocation; Ericsson; Disc;
R2-141288 Minimising the impact of D2D on other cellular traffic; Orange; Disc;
[Moved from 7.4.1 to 7.4.3]

R2-141299 Procedure and open issues for Discovery Type 1 and 2b; Sony; Disc;
R2-141378 Way forward of type 1 discovery resource allocation regarding congestion and collision; Potevio; Disc;
R2-141387 Discovery Resource Configuration Signaling; Samsung; Disc;
R2-141606 Resource Allocation for D2D Discovery; General Dynamics; Disc;
R2-141673 Data flow for D2D intra-cell and inter-cell discovery; ZTE; Disc;
R2-141737 Applicable RRC state of Type1; LG Electronics Inc.; Disc;
All 10 Tdocs above not treated

Other
R2-141677 Coexistence of D2D discovery and WAN; Qualcomm Incorporated; Disc;
R2-141726 Inter-cell discovery; LG Electronics Inc.; Disc;
R2-141227 Protocol aspects for D2D discovery; Intel Corporation; Disc;
R2-141349 Discussion on Inter-Cell D2D Discovery; ITRI; Disc;
R2-141386 Consideration of Inter-cell D2D Service; Kyocera; Disc;
[Moved from 7.4.4 to 7.4.3]

R2-141390 Logical Channel & MAC Functions for Discovery; Samsung; Disc;
R2-141391 Discovery Resources & UE-eNB Transmissions in Uplink; Samsung; Disc;
R2-141393 Discovery Monitoring in RRC Connected State; Samsung; Disc;
R2-141420 Network control for Type 2B resource request transmission; Fujitsu; Disc;
R2-141436 Procedures for Type 1 and Type 2 Discovery Resource Allocation; Huawei, HiSilicon; Disc;
R2-141493 Discussion on the D2D discovery message size; ZTE; Disc;
R2-141496 On prohibiting selected UEs from using Type 1 resources; ZTE; Disc;
R2-141601 Device to Device Discovery: Steps and Resource Allocation; Motorola Mobility; Disc;
R2-141671 Inter-cell D2D Discovery; Qualcomm Incorporated; Disc;
R2-141722 Synchronization for D2D discovery in NW coverage; LG Electronics Inc.; Disc;
R2-141723 Prevention of resource monopoly by a UE; LG Electronics Inc.; Disc;
R2-141732 Device-to-Device Direct Discovery Message Transmission; ETRI; Disc;
R2-141736 On L2 Protocol Stack for D2D Discovery and Communication; CEWiT; Disc;
[Moved from 7.4.1 to 7.4.3]

All 18 Tdocs above not treated

36.300 CRs
R2-141679 Stage 2 CR : Device to Device Discovery; Qualcomm Incorporated, Samsung; CR; 36.300; B; not treated

Late or withdrawn
R2-141524 Signaling for Discovery Resource Request; CEWiT; Disc;
[withdrawn]

R2-141495 Data flow for D2D intra-cell and inter-cell discovery; ZTE; Disc;
[Withdrawn] (contains wrong document)

7.4.4 Other

No contributions

7.5 WI: Smart Congestion Mitigation in E-UTRAN

(SCM_LTE-Core, leading WG: RAN2, REL-12, started: Mar.14, target: Sep.14, WID: RP-140434)
TR 36.848 v1.0.0 (RP-131661)
Time Budget: 0,0 TU in RAN2-85bis (will only be discussed from May onwards! Don't submit documents!)

Incoming LSs
R2-141831 Reply LS on MMTEL and SMS prioritization; LSin; from CT1; to RAN2; CC SA1, RAN
[Late]

- Intel wonders what we do if we don't get further input before our next meeting. Ericsson thinks we could maybe just focus on the ASN.1 and leave the rest until CT1 replies. LG thinks we could also discuss some PLMN aspects (Network Sharing). NSN thinks we should just wait until CT1 is done since that is the only thing that is required in order to make the procedural text.

=> Noted
=> If we don't receive input from CT1 before RAN2-86, we will spend much time in RAN2-86

7.6 WI: TDD Interference Management and Traffic Adaptation (eIMTA)

(LTE_TDD_eIMTA-Core, leading WG: RAN1, REL-12, started: Dec 12, target: Jun.14, WID: RP-121772)
Time Budget: 0,5 TU in RAN2-85bis (+0,5 TU in RAN2 UP session)

7.6.1 General

LSs and running draft CRs

Incoming LSs
R2-141048 LS on handling of subframe #6 in LTE_TDD_eIMTA (R1-141025; contact: CATT); RAN1; LSin; to: RAN2;
=> Noted
R2-141064 LS on RRC parameters for LTE_TDD_eIMTA (R1-141066; contact: CATT); RAN1; LSin; to: RAN2;
=> Noted

7.6.2 Stage-2 & Stage-3 Control Plane

Remaining Stage-2 aspects.
Stage-3 CP aspects (primarily RRC Signalling for eIMTA support).

Subframe #6
R2-141113 Discussion on the subframe #6 in eIMTA; ZTE; Disc;

- Huawei thinks we should also look into paging and RAR. Huawei thinks it could also be made to work for those two with special constraints.
- Chairman wonders why RAN1 made this choice. Wouldn't we solve all the listed issues if we would say that subframe #6 is always treated according to SIB1. Samsung thinks that ZTE and Huawei documents identified necessary network restrictions but Samsung would be fine as long as it does not put new requirements on the UE. LG agrees with the chairman that it seems to be simpler to follow SIB1. Huawei thinks that following SIB1 is not good since it would introduce a new TDD configuration. ZTE agrees with Huawei and thinks that sticking to SIB1 configuration would have restricted the possible TDD combinations that can be indicated by SIB1 and L1.

- CATT thinks that the UE could transmit common channels as if it was a special subframe and dedicated channel as if it was a DL subframe. Samsung wonders in what format the NW should transmit if the subframe has been configured as paging subframe for legacy and eIMTA UEs.
- Samsung thinks that an eIMTA configured UE in RRC Connected may verify paging notification for SI change in subframes that are used as special subframe but it treats them as if they were DL subframes. Therefore, it will not find the paging notification. Therefore, Samsung thinks that the UE behaviour with respect to paging monitoring in connected needs to be changed if we follow the RAN1 agreement. Huawei is not convinced. QC agrees with Samsung and thinks that also CMAS could be impacted.

=> RAN2 thinks that the RAN1 agreements are acceptable but may require certain network restrictions/behaviour.

=> CB: [LTE/eIMTA] A draft reply LS on handling of subframe #6 in LTE_TDD_eIMTA capturing the agreement above can be provided in R2-141823 (CATT)

R2-141823 Draft reply LS on handling of subframe #6 in LTE_TDD_eIMTA; to RAN1; Contact: CATT

✓ => The reply LS on handling of subframe #6 in LTE_TDD_eIMTA; to RAN1 is agreed in R2-141852

R2-141571 Discussion on the subframe #6 for TDD eIMTA; Sharp; Disc;

R2-141592 Handling of subframe 6 for broadcast traffic; Huawei, HiSilicon; Disc;

[Moved from 7.6.1 to 7.6.2]

R2-141597 Draft Reply LS on handling of subframe #6 in LTE_TDD_eIMTA; Huawei; LSout; related to R2-141592;

[Moved from 7.6.1 to 7.6.2]

All 3 Tdocs above not treated

Other

R2-141605 Handover into eIMTA cell; Qualcomm Incorporated; Disc;

=> Noted

R2-141640 Subframe Pattern signaling aspects in eIMTA; Samsung; Disc;

-

Agreements

1 eIMTA CSI patterns are independent of the eICIC CSI pattern.

2 10-bit bitmap indexing the SF number and “0” indicating the SF corresponds to 1st CSI set and “1” indicating the SF corresponds to 2nd CSI set.

3 10-bit bitmap indexing the SFs for the 2nd UL power control process and values for Po and alpha to be used for that process (the SFs indicated as 0 follow the default power control process and the default Po and alpha)

=> CB: [LTE/eIMTA] Can provide a draft 36.331 CR including the agreements from this meeting in R2-141824 (CATT)

R2-141598 RRC configuration issues for eIMTA; Huawei, HiSilicon; Disc;

not treated

36.331 CRs:

R2-141191 Introduction of TDD eITMA; CATT; CR; 36.331; B;

=> revised in R2-141759

R2-141759 Introduction of TDD eITMA; CATT; CR; 36.331; B; revision of R2-141191;

=> revised in R2-141824

R2-141824 Introduction of TDD eITMA; CATT; CR; 36.331; B; revision of R2-141759;

- CATT clarifies that support of TDD/FDD CA would require some further changes.

=> postponed

✉ **[LTE/eIMTA] Email discussion [85bis#20] Introducing eIMTA in 36.331 (CATT) until next meeting**
-Review 36.331 CR in R2-141824
=> Intended outcome: Endorsed Running 36.331 CR to RAN2-86

R2-141600 Introducation for eIMTA; Huawei, HiSilicon; CR; 36.331; B;
not treated

7.6.3 Stage-3 User Plane

Documents in this agenda item are planned to be treated in the UP session. See Annex G.

Is SPS supported in combination with eIMTA. Any additional impact? Need for changes?

SPS
R2-141114 Discussion on the SPS operation in eIMTA; ZTE; Disc;
R2-141186 SPS for TDD eIMTA; CATT; Disc;
R2-141229 Discussion on SPS configuration for TDD eIMTA; Intel Corporation; Disc;
R2-141590 SPS Issues for eIMTA; Huawei, HiSilicon; Disc;
All 4 Tdocs above not treated

36.321
R2-141427 Capturing eIMTA in MAC specification; LG Electronics Inc.; Disc;
R2-141187 TDD eIMTA Impacts on MAC Specification; CATT; Disc;
[Moved from 7.6.1 to 7.6.3]

R2-141188 Introduction of TDD eITMA - Alt1; CATT; CR; 36.321; B; related to R2-141186;
[Moved from 7.6.1 to 7.6.3]

R2-141189 Introduction of TDD eITMA - Alt2; CATT; CR; 36.321; B; related to R2-141186;
[Moved from 7.6.1 to 7.6.3]

R2-141430 draft CR to 36.321 on eIMTA operation; LG Electronics Inc.; CR; 36.321; B;
R2-141581 DRX for eIMTA (option 1); Huawei, HiSilicon; CR; 36.321; B;
R2-141585 DRX for eIMTA (option 2); Huawei, HiSilicon; CR; 36.321; B;
R2-141589 SPS for eIMTA; Huawei, HiSilicon; CR; 36.321; B;
R2-141588 RACH and eIMTA-RNTI for eIMTA; Huawei, HiSilicon; CR; 36.321; B;
R2-141629 Specifying dynamic TDD operation in 36.321; Samsung; CR; 36.321; B;
All 10 Tdocs above not treated

36.302
R2-141190 Introduction of the Downlink Reception Types for TDD eIMTA; CATT; CR; 36.302; B;
[Moved from 7.6.1 to 7.6.3]

Not treated

Late or withdrawn
R2-141185 SPS for TDD eIMTA; CATT; Disc;
[Withdrawn]

7.7 WI: Low Cost MTC for LTE

(LC_MTC_LTE-Core, leading WG: RAN1, REL-12, started: Jun 13, target: Jun 14, WID: RP-140522)
Time Budget: 1,0 TU in RAN2-85bis
Note that the "Enhanced Coverage Enhancements" aspects were removed in the latest update of the WID.
Including output of [85#10][LTE/MTC-LC] Running 36.300 CR (Vodafone)

Incoming LSs
R2-141049 Reply to LS to R2-134596 on mobility support for LC MTC UEs and MTC coverage enhancement (R1-141029; contact: Vodafone); RAN1; LSin; LS05; to: RAN2;
=> Noted

R2-141050 LS on Identification of TBS/bandwidth limited UE by eNB (R1-141033; contact: Alcatel-Lucent); RAN1; LSin; to: RAN2;
=> Noted

RAN1 agreements according to RAN1 chairman notes from April 1st

Agreement:

- *For broadcast traffic, there is no explicit restriction on the resource allocation size for MTC UEs*
- *There is no change of the current mapping defined for existing UE categories between MCS indices and TBS lookup indices (I_MCS) for MTC UEs*
- *For unicast traffic, there is implicit restriction on the resource allocation size due to the max TBS limitation (1000 bits) under explicit MCS indices (e.g., the MCS indices mapped to explicit TBS lookup indices) for Cat 0 UEs*

  o For implicit MCS indices (e.g., 29/30/31 in the current MCS table), there is no restriction on the resource allocation size

  o Note:
  - There is no cost saving gains of imposing an explicit restriction for unicast since there is no explicit restriction for broadcast traffic
  - As brought up by some companies, an explicit restriction for unicast may be forward compatible considering possible narrow band related design for low cost UEs

- DT wonders why the restriction to 1000 bit was kept while the bandwidth restriction was removed. Ericsson thinks that it might still allow to save soft buffer. Chairman thinks that it is more about the processing. Huawei agrees with Ericsson that it still saves soft buffer and thinks that the post FFT buffer is the same as for higher category UEs. DT would like to avoid that these UEs have a negative impact to other UEs and not optimize the network for these UEs.
- Intel thinks that we still need to discuss whether we need to distinguish UEs in paging or random access. Intel thinks the eNB needs to know for Msg4 and therefore the UE should inform the eNB in Msg3. LG thinks that this is being discussed in RAN1.
- Sony thinks that it still desirable for the eNB to know whether the UE has one antenna when sending Msg2. So, it should still come from the UE in Msg1. Intel thinks that the low cost UEs do not need to be distinguished for Msg2. Intel thinks that for Msg4 it needs to be known since there is a 1000 bit limit. Chairman thinks that the network would anyway need to adjust SIB and paging and therefore it might not need to know for Msg2. Huawei thinks that there are no retransmissions for paging or Msg2. CATT agrees that for Msg2 and paging the eNB does not need to know that there are low cost UEs.

Impact of and solutions for TBS and PRB limitation

Impact of 6 (or 15) PRB restriction? Acceptable at all from system point of view? If so, adopt dynamic scheduling (C1) or more complex schemes?
Depending on PRB restriction: How and when does the eNB need to know that a UE is a low cost UE? Msg1; Msg3; …? What is the impact on the system capacity if all UEs need to be treated as low cost UE until after connection establishment? Reserve RACH resources for low cost UEs? Or add an indication to Msg3? Impact on paging? Impact on SIB, PDSCH Scheduling, …?

Open question:
1) Capability is indicated by Msg1
2) Capability is indicated by Msg3
3) Capability is indicated in UE capabilities

- Huawei thinks we could do it in Msg1 so that the eNB could adjust Msg2 coding. Otherwise, it is sufficient to do it in the UE capabilities since Msg4 is very small anyway

and the eNB does not need to know. Sierra Wireless thinks it would be good to know in Msg1. QC thinks that it is needed in Msg1 as Huawei suggests.

- ZTE thinks that it would be good to be able to do it in UE capabilities. Alternatively, it could come in Msg3 but it seems that the space in that message is limited and then Msg1 might be better. Intel thinks that splitting RA resources is not an easy thing.
- Ericsson wonders whether we should wait for input from RAN1 and RAN4 on the expected loss due to one antenna.
- Ericsson thinks that Msg4 might be usually small but we might need to know the UE category to decide how to schedule it.
- Broadcom thinks that we will need at least need it in regular capabilities. Having it earlier would be an optimization. Broadcom thinks that a possible gain on link adaptation could be eaten up by a loss in RA capacity.
- Vodafone thinks it will be future proof to know in Msg3.
- Samsung would not like to adopt option 1. Samsung is not sure about Msg3 or UE capabilities e.g. due to RRCConnectionReconfiguration.
- Panasonic wonders how we could fit it into Msg3. Ericsson thinks that there are several ways e.g. by a critical extension. Samsung thinks one could also use another logical channel ID in MAC when sending common channel.
- Intel thinks one could also consider an indication in Msg5 to avoid the issue with RRCConnectionReconfiguration. ALU thinks that Msg5 could carry a NAS message. Chairman wonders whether the 1000 bit also applies for UL and if so why. LG thinks the WID says it applies to UL.
- MediaTek thinks that there is already a RA resource splitting available today. MediaTek wonders whether we want to re-use it or introduce another solution.
- Intel thinks that Msg4 always needs to be built according to Rel-8 assumptions. Even if we add functionality in future releases, it cannot contain much more than what a Rel-8 UE is prepared to handle. From that point of view Msg5 should be OK.
- QC thinks that for ATTACH the eNB needs to assume for all DL NAS messages to all UEs.
- Vodafone would suggest to make it a working assumption. IDT, Sierra Wireless, Sony would also not like to make it an agreement. Ericsson and Samsung think we should attempt to make agreements. Of course RAN1 can tell us if they have.

Working Assumption

1 The UE does not indicate its low complexity capability in Msg1, Msg3 or Msg5. It is only part of the normal UE capabilities.

2 If the 1000 bit restriction applies also to UL: A low complexity UE supporting only 1000 bit UL TBS shall restrict its BSR to less than 1000 bit until having provided the UE capabilities to the eNB or having received the first RRCConnectionReconfiguration so that the NW can restrict all UL grants accordingly.

=> CB: [MTC/LowCost] A draft LS to RAN1 can be provided in R2-141822 (Vodafone)

- Capture the working assumption above and ask RAN1 for further input if any.
- RAN2 is not sure whether and why the eNB would need to know the 1 antenna restriction for scheduling Msg2 or Paging given that the eNB has no CQI feedback for accurate link adaptation. RAN2 therefore wonders whether RAN1 sees any drawback if the eNB acquires the low complexity capability only after Msg3.
- RAN2 wonders whether the 1000 bit restriction applies also to UL and if so why (is encoding processing intensive? Memory (Soft buffer seems not needed for UL)?). If the 1000 bit restriction does not apply for UL RAN2 may prefer to transfer the capability only in Msg5 (due to simplicity).

R2-141822 LS on Resource allocation restriction and identification of low complexity MTC UEs (Vodafone)

=> Change to “RAN2 noticed the RAN1 agreement that there is no resource allocation size restrictions for the broadcast traffic and that TBS size for SI-RNTI, P-TMSI and RA-RNTI is max 2216bits (legacy behaviour), but the TBS size for unicast traffic is restricted to 1000 bits as previously indicated by RAN1.”

- LG is not sure whether it is really that simple. Intel thinks this is a BSR before DRBs are established and that should make it simpler.

=> Change “kindly” to “respectfully”
=> Remove the BSR solution from the LS and just ask whether UL is also restricted.
✓ => With this change the LS on “Resource allocation restriction and identification of low complexity MTC UEs” to RAN1 is agreed in R2-141825

R2-141104 Downlink Bandwidth Reduction Analysis; NSN, Broadcom, Nokia Corporation, NTT Docomo; Disc;
R2-141228 Discussion on open aspects for low Cost MTC UEs; Intel Corporation; Disc;
R2-141434 Impacts of low-cost MTC on RAN2; MediaTek Inc.; Disc;
R2-141086 Reduce PDCCH Blind Decoding Options; Sierra Wireless; Disc;
R2-141087 PRACH Considerations for CAT 0 UE's; Sierra Wireless; Disc;
R2-141088 Low Complexity UE's PRB Limit Evaluation; Sierra Wireless; Disc;
R2-141193 Discussion on Low Cost MTC Impact; CATT; Disc;
R2-141304 Paging mechanism for low cost UEs; Ericsson; Disc;
R2-141307 DRAFT Reply to LS on Identification of TBS bandwidth limited UE by eNB; Ericsson; Disc;
R2-141306 Capabilities and signalling support for low cost MTC feature; Ericsson; Disc;
R2-141322 Possible way forward for low cost MTC; Samsung; Disc;
R2-141499 Considerations on some low complexity aspects; ZTE; Disc;
R2-141699 Open issues for low cost UE; LG Electronics Inc.; Disc;
R2-141700 Issues on bandwidth limitation for low cost MTC UE; LG Electronics Inc.; Disc;
R2-141706 Discussion on Low-complexity UE; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141720 Connecting low cost/complexity UE without negative impact to normal UE; Qualcomm Incorporated; Disc;
All 16 Tdocs above not treated

Draft Outgoing LSs
R2-141105 Draft LS on Downlink Bandwidth Reduction; NSN, Nokia Corporation; LSout;
R2-141669 [DRAFT] Reply LS on Identification of TBS/bandwidth limited UE by eNB; Alcatel-Lucent; LSout; LS05; draft reply to R2-141049 (R1-141033);
All 2 Tdocs above not treated

Other
Additional support for cell reselection (e.g. listing neighbour cells supporting low cost UEs)?
How and in which message to indicate the low-cost capability/category? Msg1, Msg3, …?
R2-141439 Cell selection and reselection for LC-MTC UE; MediaTek Inc.; Disc;

Proposal 4:
- LG wonders whether one can assume that eNBs know that. Huawei thinks it could be configured via OAM. NSN does not like to broadcast this information about neighbours. NSN thinks that for CSG cells the UE has to acquire the SI and then decides whether to consider it barred. NSN we should apply a similar mechanism here. Sony thinks that PCI splitting allows to avoid that UEs have to read SI for CSG cells.
- MediaTek thinks that it would be beneficial if the UE would know this information from reselection information. Ericsson also thinks that it should also work if reselection information does not provide it. MediaTek thinks it would also work without but with less battery consumption.
- Samsung thinks that this kind of optimization is not really needed for a low cost UE. DT agrees that we should not impact the reselection information for this purpose. Samsung thinks it would not be an issue if low cost UEs anyway support few frequencies. Sony thinks it is important to know for inter-frequencies.
- MediaTek considers it primarily important for the inter-frequency case where a low cost UE would not move to the other frequency if it knows that the cells there don’t support low cost. Sony agrees.
- Orange thinks it could be sufficient to indicate whether another carrier supports it. Vodafone thinks we should indicate it per cell. Samsung thinks that the current carrier could set dedicated priorities to keep low cost UEs on one carrier.

Proposal 1:
- QC thinks that the UE is not allowed to select a second best cell on the same carrier instead. Nokia thinks that we could consider the UE barred and then the UE can decide based on the existing NW indication whether the UE is allowed to camp on a second best cell on the same carrier.

Agreements

1 LC-MTC UE considers the cell incapable of supporting LC-MTC as barred cell and should not camp on it. (Can discuss whether any of the existing barring mechanism requires further modification)

R2-141311 Handover for low cost MTC feature; Ericsson; Disc;
R2-141678 Clarification on parallel DL reception for low cost MTC UE; Samsung; Disc;
R2-141094 Cell reselection for low cost MTC UEs; Huawei, HiSilicon; Disc;
R2-141301 Low-cost open Issues; Sony; Disc;
R2-141302 On forward compatibility of Rel-12 low complexity MTC specification; Sony; Disc;
R2-141305 eMBMS support for low cost UEs; Ericsson; Disc;
All 6 Tdocs above not treated

36.300 CRs

R2-141462 Stage 2 aspects of low cost/complexity MTC UE features; Vodafone; CR; 36.300; B; result of email discussion [85#10][LTE/MTC-LC];
- Huawei thinks we should remove "NOTE: if a low cost/complexity UE is not able to receive multiple Transport Blocks within a subframe due to maximum TBS and/or bandwidth limitation, it's up to UE implementation which TB to prioritize. The low cost/complexity capability is included in the UE capability signalling message and it is FFS whether it can be provided implicitly as part of a new category."

✉ **[LTE/MTC-LC] One week to update the running stage-2 CR (Vodafone)**
-Use R2-141462 as baseline
=> Intended outcome: Endorsed running 36.300 CR

36.306 CRs

R2-141310 Introduction of Category 0 for low cost UEs; Ericsson; CR; 36.306; B;
R2-141095 Introduction of Category 0 for low cost MTC; Huawei, HiSilicon; CR; 36.306; B;
All 2 Tdocs above not treated

36.331 CRs

R2-141308 Capabilities and signalling support for low cost MTC feature (Alternative 1); Ericsson; CR; 36.331; B;
R2-141309 Capabilities and signalling support for low cost MTC feature (Alternative 2); Ericsson; CR; 36.331; B;
R2-141312 Handover for low cost MTC feature; Ericsson; CR; 36.331; B;
All 3 Tdocs above not treated

36.302 CRs

R2-141096 Support of low cost MTC in 36.302; Huawei, HiSilicon; CR; 36.302; B;
not treated

36.304 CRs

R2-141097 Support of low cost MTC in 36.304; Huawei, HiSilicon; CR; 36.304; B;
not treated

Late or withdrawn

R2-141093 Capability signaling for low cost MTC UEs; Huawei, HiSilicon; Disc;
[Withdrawn]

7.8 LTE TDD-FDD CA joint operation

(LTE_CA_TDD_FDD-Core, leading WG: RAN1, REL-12, started: Jun 13, target: Jun 14, WID: RP-140465)
Time Budget: 0.25 TU in RAN2-85bis
RAN user plane and control plane impacts of TDD-FDD CA (if any).

Incoming LSs

R2-141063 LS on RAN1 TDD-FDD CA status and related RRC impact (R1-141065; contact: Nokia); RAN1; LSin; to: RAN2;
=> Noted

General

R2-141111 TDD/FDD joint operation and RAN2 aspects; Nokia Corporation, NSN; Disc;
=> Noted
=> We wait for further input from RAN1.
=> If TDD PCell is supported we assume that a per-UE capability/IOT bit is introduced by which the UE indicates whether it supports the TDD PCell. If so, this applies to all TDD/FDD Band Combinations indicated in the supportedBandCombination IE.

R2-141242 Support of TDD-FDD CA with earlier release ASN.1; NTT DOCOMO, INC.; Disc;

R2-141415 Supporting TDD-FDD CA operation in MAC; LG Electronics Inc.; Disc;

R2-141437 UP impact on TDD-FDD Joint operation; NTT DOCOMO, INC.; Disc;

R2-141449 RAN2 impact analysis of TDD-FDD CA; Huawei, HiSilicon; Disc;
All 3 Tdocs above not treated

CRs

R2-141112 Full Duplex capabiltiy for TDD-FDD CA; Nokia Corporation, NSN; CR; 36.306; B;

R2-141560 Introduction of TDD-FDD CA in MAC; Ericsson; CR; 36.321; B;
Change to Cat. B

R2-141417 draft CR to 36.321 on TDD-FDD CA operation; LG Electronics Inc.; CR; 36.321; B;
All 3 Tdocs above not treated

7.9 Other LTE Rel-12 WIs/SIs

Input to any other Rel-12 WI/SI not explicitly listed above. Note that TEI12 should be submitted in the TEI12 AI.
(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, target: June 14, WID: RP-121416)
(HetNet_eMOB_LTE-Core, leading WG: RAN2, REL-12, started: Dec.12, target: June 14, WID: RP-122007)
(Cov_Enh_LTE-Core, leading WG: RAN1, REL-12, started: Jun.13, target: Jun.14, WID: RP-130833)

*Note: RAN-63 postponed the RAN2 CRs for Cov_Enh_LTE-Core and intends to approve them together with the RAN1 CRs in June. Therefore, the previously agreed RAN2 CRs need to be re-submitted to the RAN2 meeting in **May**.*

EHNB_enh3-Core

R2-141538 Minor correction inbound mobility to shared CSG cell; Samsung; CR; 36.331; F; REL-12; EHNB_enh3-Core;
=> Remove “include”
=> With this change the CR is in principle agreed in R2-141839

HetNet_eMOB_LTE-Core

Mobility History Information:

R2-141168 Corrections on UE mobility history information reporting; Huawei, HiSilicon; CR; 36.331; F; REL-12; HetNet_eMOB_LTE-Core;
=> The improvement is not considered needed.
=> Not agreed

T312:

R2-141169 Corrections on timer T312; Huawei, HiSilicon; CR; 36.331; F; REL-12; HetNet_eMOB_LTE-Core;
- ALU thinks that RAN3 is in the process of requesting the same change from RAN2.
=> Postponed

R2-141520 Minor Corrections to T312; Samsung Electronics; Disc; REL-12; HetNet_eMOB_LTE-Core;
- Samsung suggests not to consider Proposal 4.

- Intel and Ericsson think that also the other changes are not really needed as the NW can already configure the UE accordingly. QC thinks that the CR does not change the functionality. The current specification seems to be easier to manage. NSN has no strong opinion but would also be fine with the change.
- Samsung thinks that so far we kept the measurement ID clean. Secondly, during handover, the T312 configuration could end up on the wrong frequency. Huawei would support the proposals.

=> Noted.
=> Can consider updated CR covering Proposals 1, 2 and 3 in the next meeting.

R2-141523 CR on Minor Corrections to T312; Samsung Electronics; CR; 36.331; F; REL-12; HetNet_eMOB_LTE-Core;
=> Postponed

7.10 LTE TEI12

Small Technical Enhancements affecting LTE Rel-12 that do not belong to any Rel-12 WI.
Note: A TEI proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

7.10.1 LTE TEI12 CP and joint CP/UP

GCSE

R2-141688 Discussion on forward compatibility issues on group communication enhancements; Alcatel-Lucent; Disc; REL-12; TEI12;
=> Noted

R2-141090 Specify new value for MCH/MCCH period for group communication; ZTE; Disc; REL-12; TEI12;
R2-141092 [Draft] Reply LS to S2-140844 = R2-141060 on choice of scheduling period for MBMS; ZTE; LSout; LS01; REL-12; TEI12;
All 2 Tdocs above not treated

CRs:

R2-141689 CR on forward compatibility support on possible group communication enhancements; Alcatel-Lucent; CR; 36.300; C; REL-12; TEI12;
- Samsung thinks we should just clarify that the UE should be able to cope with a LCHID at the end of the MSI that it does not comprehend.
- NSN thinks that these notes would not really ensure forward compatibility.
- ZTE thinks that this CR has impact on legacy UEs.

=> Postponed
=> Can be discussed further offline.

R2-141091 Specify new value for MCH/MCCH period for group communication; ZTE; CR; 36.331; B; REL-12; TEI12;
not treated

Aggressive RACH

R2-141297 Correction to PRACH transmission failure handling - Aggressive RACH issue.; Sony, AT&T, Interdigital Communications, Broadcom Corporation; CR; 36.331; F; REL-12; TEI12;
- Nokia and Intel consider it as a new feature and not as a correction.
- Intel thinks it should either have a capability bit or left to UE whether or not it supports it. Chairman thinks given it is only in common configuration, one would not need a capability bit. NSN wonders whether that is also true if the IE is sent during handover. Sony thinks it is also OK since the UE needs to be able to comprehend it anyway in SIB. NSN thinks this does not apply to dedicated signalling. Huawei thinks that we should then maybe try to do without configuration. Broadcom thinks it would be mandatory for Rel-12 and optional for Rel-11. Huawei thinks it is not good if the NW does not know which UE supports it. NSN thinks one could put the parameter into the SIB itself rather than in the RACH Config to avoid the need for a capability.

- Huawei thinks the UE could just do this without configuration. Ericsson thinks that according to current specification the UE must not stop preamble transmission.
- AT&T and Orange support the change and see issues today. NSN would like to see more analysis and not just introduce this feature.
- DCM wonders why 240ms is enough. Ericsson supports the change but would also suggest larger values.

=> Change to Cat. C
=> Can discuss whether to move the IE to SIB level (so that it is not in dedicated)
=> Can consider larger values
=> Postponed

R2-141298 Correction to PRACH transmission failure handling - Aggressive RACH issue.; Sony, AT&T, Interdigital Communications, Broadcom Corporation; CR; 36.321; F; REL-12; TEI12;

- Ericsson suggests moving the change to 5.1.2 so that it also applies to contention based RA.

=> Move the change to 5.1.2 so that it also applies to contention resolution failure
=> Correct the styles
=> Change to Cat. C
=> Update cover page (remove the “struggling…”)
=> Postponed

Load Balancing

R2-141314 Idle mode load balancing improvements; Ericsson; Disc; REL-12; TEI12;

- QC wonders whether there are other UE requirements than cell specific requirements. Ericsson clarifies that there are none.
- Ericsson explains that the case is that the UE is on one carrier while on the other carrier there is a loaded (macro) and a less loaded (pico) cell. Then, the inter-frequency cell reselection priorities should be set so that only UEs in coverage of the less loaded cell perform the inter-frequency re-selection.

=> Can be discussed further offline
=> Postponed

MDT/MRO/IDC

R2-141521 MRO and MDT impacted by in-device coexistence interference; Fujitsu,NSN,Pantech; Disc; REL-12; TEI12;

- NSN thinks that the indication could help the NW to understand whether it should enable IDC indications.
- QC thinks that if the NW does not react to the IDC indication, the NW should expect bad measurements and RLFs to happen.
- Nokia thinks that the UE should in state 1 deny the ISM transmission and then the RLF should not happen.
- Samsung thinks that the NW should store the fact that the UE already sent an IDC indication and if it then receives an RLF indication it could conclude that it was due to IDC. Ericsson agrees that if the NW sees IDC indications, it can understand what the problem was.

=> Scenario 1: The NW can avoid the problem by configuring IDC for carriers suffering from IDC
=> Scenario 2: For MRO, the NW could remember whether it has received an IDC indication from the UE and if so, exclude the MRO from handover optimizations
=> No problem observed for MDT so far.
=> Can comeback if a clear issue and significant support is shown

SIB16

R2-141243 Addition of Time Uncertainty in SIB16; Qualcomm Incorporated, Samsung; Disc; REL-12; TEI12;

- NSN thinks that for GNSS positioning SIB16 is not a requirement since time assistance can be obtained via LPP. QC thinks that we want GPS information e.g. for MDT. Ericsson agrees with NSN.
- Ericsson thinks we discussed this before. Ericsson thinks that there is already a version without accuracy requirements.
- Ericsson thinks that the UE could assume some accuracy or maybe learn something over time. Ericsson thinks the reasoning has not changed and it was not agreed earlier.

- NSN thinks we discussed it in 83bis and it was concluded that it is unclear what the benefit on the UE side would be but it became clear that it would put additional requirements on the NW side that may be difficult to fulfil. Therefore, it was agreed not to support this. QC still thinks it is very beneficial for the UE. QC thinks that it does not put new requirements on the UE. If the NW is synchronized, it could possibly indicate a high accuracy and otherwise not. QC thinks the accuracy information requires only 7 bit. NSN thinks that given the NW's reactions, this would not be implemented anyway. Samsung thinks that all networks collocated with CDMA2000 would already have the finest granularity. Ericsson thinks the accuracy does not come from the accuracy of the sync source but also from converting it into accuracy of the LTE signal and to maintain it. QC wonders whether NW vendors acknowledge that it is beneficial. NSN is not sure it is really beneficial.
- QC wonders whether it helps if they provide a quantitative analysis of the benefits. NSN thinks that from positioning perspective, so far this can be done without eNB involvement. NSN would at least for that purpose not want to support this. Ericsson agrees.
- MediaTek thinks there is no problem to provide the accuracy. Ericsson clarifies that the compromise was to include SIB16 without any accuracy requirements or information.

=> Not agreed.

Small Corrections

R2-141506 Clarification on Inbound mobility to CSG cells; HTC; CR; 36.300; F; REL-12; EHNB-RAN2, TEI12;
- Intel thinks that TAI is the combination of PLMN and TAC. NSN agrees.
- Intel thinks there is no need to update these stage-2 issues given that stage-3 is correct and that it is what people implement.

=> Not agreed

R2-141357 Corrections for TS36.314; Huawei, HiSilicon; CR; 36.314; D; REL-12; TEI12;
=> Correct abbreviations
=> Postponed to next meeting

R2-141741 Introduction of REL-12 indication; HTC; CR; 36.331; F; REL-12; TEI12, LTE-L23;
- Ericsson thinks it should be done with ASN.1 freeze. Doing it now would actually allow implementing the release which should not be done given that it is most likely subject to non-backwards compatible change. DCM thinks it was earlier done with the capability signalling.

=> Postponed
=> Will be added during ASN.1 freeze.

R2-141453 Correction to a note in 5.3.10.3; HTC; CR; 36.331; F; REL-12; TEI12;
=> Add WI Code: LTE-L23
- Intel and NSN think given this is a note from Rel-8 this does not need to be change.

=> Not agreed

Late or withdrawn

R2-141224 Missing scenarios for the MBMS service continuity; Fujitsu; Disc; REL-12; TEI12; [Withdrawn]

7.10.2 LTE TEI12 UP

The documents in this AI will be treated in the UP session. See Annex G.

R2-141315 Extended RLC LI field to support Jumbo Frames; Ericsson; Disc; REL-12; TEI12;
R2-141316 Extended RLC LI field; Ericsson; CR; 36.306; B; REL-12; TEI12;
R2-141317 Extended RLC LI field; Ericsson; CR; 36.322; B; REL-12; TEI12;
R2-141318 Extended RLC LI field; Ericsson; CR; 36.331; B; REL-12; TEI12;
R2-141623 RLC limitation in jumbo subframe case; Huawei, HiSilicon; Disc; REL-12; TEI12;
R2-141626 Clarification on the multiplxing RLC PDUs in one MAC PDU; Huawei, HiSilicon; CR; 36.322; F; REL-12; TEI12;
R2-141746 Initialization of TA values; Ericsson; Disc; REL-12; TEI12;

8 UTRA Release 10 and earlier releases

R2-141143 Correction to the handling of IE "E-DPDCH power interpolation" when absent" Broadcom Corporation, Ericsson CR 25.331 F REL-7TEI7

- NSN has a preference to put the note in the procedural text. Broadcom thinks it is too late to add procedural text for the IE in Rel-7
- NSN wonders if we should have UL 64QAM in the WI code. Broadcom thinks that this may apply to Rel-11 as well.
- QC thinks that it should only be TEI7. Broadcom thinks that it was initially introduced for 16QAM and then it was applied to other features.

=> Add 16QAM as a WI code as well
=> The CR is agreed in principle

R2-141144 Correction to the handling of IE "E-DPDCH power interpolation" when absent" Broadcom Corporation, Ericsson CR 25.331 F Related to R2-141143; Specify UE behaviour from Rel-11 onwards REL-11 TEI11
=> Correct E-DPCH to E-DPDCH
=> Add 16QAM as a WI code as well
=> The CR is agreed in principle with the two changes

R2-141145 Alignment between the procedure text and the tabular for inclusion of IE Call type"" Broadcom Corporation CR 25.331 F REL-11 TEI11, RANimp-DelayOpt
- Ericsson thinks that the procedure text is already clear and agree that the call type is only applicable in CELL_FACH. This is just more editorial. Broadcom agrees that this is more editorial and can also be in a rapporteur CR.
- NSN wants to ensure that if we are in enhanced CELL_PCH we can still use the call type when we send the IDT. Broadcom confirms that when you send the IDT then the UE moves to CELL_FACH state, so it will apply to those UEs as well.
- Ericsson indicates that the IE “Call type” is not aligned in some tables and with the ASN.1, which is “CS Call type”

=> The alignment in this CR will be included in the Rel-12 rapporteur CR. In addition the IE name in the tabular will be updated to “CS Call type”
=> The CR is postponed (and will be incorporated in the Rel-12 rapporteur CR)

R2-141693 RLC re-establishment due to activation and deactivation of Enhanced Uplink in CELL_FACH state in SIB5/5bis Qualcomm Incorporated CR 25.331 F REL-9RANimp-UplinkEnhState, TEI9
- Ericsson agrees with the intention, however this should be tightly coupled with the UE supporting the common E-DCH and the use case.
- Qualcomm wonders if we need to also make it applicable when we change from RACH to E-DCH. We may need to re-establish if we change the LI size.
- NSN wonders if the “due to a system information modification” can be interpreted as any system information change. Ericsson thinks that in the past we have used “variable READY_FOR_COMMON E_DCH has changed due to a system information modification”

- After offline discussion: Do we need to re-establish when the LI size changes
- Qualcomm thinks that when you acquire the SIB we do not have the LI size, so we don’t need to do account for this.
- Ericsson thinks that we should also add at the beginning of the section that we enter this section if “there is a system information modification”. Broadcom is concerned that with this change we would always have to perform the actions in this section.

=> The CR is postponed

R2-141691 Disable default configuration for CELL_FACH Qualcomm Incorporated CR 25.331 C REL-9TEI9
- WI code?
- Broadcom supports the principle. We need two IOT in the RAN5 test
- NSN agrees that if there is no network supporting this feature then the feature should be disabled but there is one network that does support this. Broadcom thinks that this is critical to have the test as it is a request message. Ericsson thinks that we need to have a test and we need more network support to properly test.
- ALU wonders if we have done this in the past? One possible alternative is to bring to RAN5 attention that this is not testable and we keep the RAN2 specs unspecified.

Broadcom thinks we need to still have two networks that support it. Qualcomm doesn't think it helps discussing it in RAN5.
- NSN wants to consider the possibility of making it optional and adding a capability bit. Qualcomm thinks that a capability bit would have to be added to the RRC Connection Request and the message size is a bit of a concern.

After comeback
- Qualcomm still concerned that there is no testing opportunities so companies still want to disable for Rel-9 and Rel-10. Consider the HS-FACH and E-FACH default configuration together as a package for Rel-11 and discuss the options.
- NSN wants to first get a full view of what is happening with Rel-11. Qualcomm doesn't know what will happen with Rel-11, they are fine for now to keep mandatory until we know more about the situation in 2 years and if there are testing opportunities for Rel-11 we keep it mandatory. But the concern is for what we know now.

=> Working assumption that we disable it for Rel-9. For Rel-10 we re-discuss in the next meeting.
=> RAN2 will look at the options for Rel-11 (or Rel-10 if applicable)
=> The CR is postponed

R2-141692 Disable default configuration for CELL_FACH Qualcomm Incorporated CR 25.331 A REL-10 TEI9
=> Not treated

R2-141278 Introduction of default radio configuration for the HS-DSCH/RACH and HS-DSCH/E-DCH combinations NSN Disc
- Qualcomm thinks that we need to discuss the optionality of this feature.
- Qualcomm would like to make the default configuration more complete in the DL as well. NSN thinks that these are some aspects to consider and we can add more configurations.
- Broadcom thinks that there are some complex issues we need to look at. We are providing a large number of configurations and it is not clear what the UE is expected to do with this information. NSN thinks that we would not give more information than we would have with dedicated signalling.
- Qualcomm thinks we need to be careful with the configuration and possible conflicts with what are broadcasted in the SIB configuration, for example the E-DCH MAC-d flow identity. NSN: we should make sure that the numbers are the same

=> Noted

R2-141370 Discussion on non-optimal configuration of the secondary serving E-DCH cell Huawei, HiSilicon Disc
- ALU wonders if the reason why it was done like this in the first place was to optimize signalling. ALU thinks this is an optimization.
- Ericsson thinks that to avoid the re-configuration the network can perform a proper configuration in the first place.

=> Noted

R2-141694 Clarification of MAC-ehs window size Qualcomm Incsorporated Disc
[Late]

- Broadcom thinks that the network should ensure proper signalling. Huawei thinks that the network can handle this scenario. Qualcomm thinks that there is a possibility that the network may overlook this configuration as TSN extension is implicit and window size is explicitly configured.
- ALU thinks that another option is to specify that if the network doesn't provide the window size the UE behaviour is unspecified. Qualcomm thinks that this can be an option.
- Ericsson thinks the network should provide the correct configuration to begin with.
- Chair: Discuss whether we have a chair note in the minutes about the network expected behaviour or whether there is a need to have a CR.
- Huawei wonders if this also a problem for the UL.

=> If the UE is not configured with the TSN field extension the network should not configure MAC-ehs window size that is larger than 32.
=> Noted

R2-141280 Introduction of HS-DACH/RACH and HS-DSCH/E-DCH default radio configuration for CELL_FACH NSN CR 25.331 C REL-11 RANimp-EnhState, RANimp-UplinkEnhState, TEI11
=> Not treated

9 UTRA Release 11

9.1 WI: Further enhancements to CELL_FACH

(Cell_FACH_enh-Core, leading WG: RAN2, REL-11, started: March 11, closed: Dec. 12, WID: RP-111321)
WI was closed at RAN-58. Only corrections, if any, expected.

R2-141468 Clarification to absolute priority cell reselection in CELL_FACH Ericsson, Intel cooperation
CR 25.331 F REL-11 Cell_FACH_enh-Core
- Huawei doesn't think the CR is needed. This is a state transition to CELL_FACH and you will not be configured to perform E-UTRA measurements and reporting in CELL_FACH state, so it is not clear why this condition is needed. Broadcom thinks this is correct.
- Ericsson thinks that absolute priority enable is not clear what it refers to. Broadcom thinks that absolute priority is enabled is not clear what it mean for CELL_FACH state. Before Rel-11 we had it enabled but not for CELL_FACH state. We are clarifying what a UE needs to do in CELL_FACH state.
- Huawei wonders if we need to link it to the UE supporting the feature. Intel thinks that it is mandatory for Rel-11 UE supporting E-UTRA, so there is no need.

=> The sentence "and the UE is not configured to perform E-UTRA measurements and reporting in CELL_FACH state" is not needed
=> The CR is agreed in principle with the deletion of the sentence.

R2-141471 Clarification to absolute priority cell reselection in CELL_FACH Ericsson, Intel cooperation
CR 25.331 A REL-12 Cell_FACH_enh-Core
=> The CR is agreed in principle with the deletion of the sentence "and the UE is not configured to perform E-UTRA measurements and reporting in CELL_FACH state"

9.2 WI: HSDPA Multiflow Data Transmission

(HSDPA_MFTX-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111375)
WI was closed at RAN-58. Only corrections, if any, expected.

R2-141367 Clarification on MAC-ehs configuration for inter-Node B Multiflow operation.....Huawei, HiSilicon CR 25.331
=> We will make the procedure text positive. For example "3> if inter-Node B Multiflow operation is configured: 4> perform the actions as specified in subclause 8.6.5.23 for both MAC-ehs entities. 3> else … (legacy text)
- Qualcomm wonders if it is ok that we are removing legacy text "in the MAC-hs/ehs entity". Broadcom thinks this is ok but we should add in the cover page an explanation why it is deleted. Huawei: it is already in the cover page. Ericsson wonders if we can make it clearer by adding the new case rather than deleting. Broadcom indicates that we tried but it was complicated.
- NSN wonders if we should include the network box in the cover page.

=> We will include the RAN box in the cover page
=> Add NSN as supporting company
=> The CR is revised in R2-141770

R2-141770 Clarification on MAC-ehs configuration for inter-Node B Multiflow operation Huawei, HiSilicon, NSN CR 25.331 F REL-11 HSDPA_MFTX-Core
=> The CR is in principle agreed

R2-141081 Clarification for the second MAC-ehs entity configuration in the inter-Node B Multiflow operation NSN CR 25.331 F REL-11 HSDPA_MFTX-Core
=> Not Treated

R2-141082 Clarification for the second MAC-ehs entity configuration in the inter-Node B Multiflow operation NSN CR 25.331 A REL-12 HSDPA_MFTX-Core
=> Not Treated

R2-141083 Correction of the Multiflow dual-band capability signaling NSN, Qualcomm Incorporated CR 25.331 F REL-11 HSDPA_MFTX-Core
- ALU wonders if we want to do a non-backward compatible change? NSN agrees we should try not to, but sometime we have to. Additional the number of bits remains the same so we can consider it is a semantic change. Qualcomm also had the same concern but the current spec cannot be used as is, as it is not right.
- Ericsson agrees with the intention of the CR but thinks that the UE also signals the UE category and the network can figure out. Qualcomm thinks that the network cannot always derive this information from the UE capability. Ericsson thinks that this is not a problem. Qualcomm thinks it is important to be able to indicate DF-3C for testing purposes.
- NSN indicates that companies are ok with the intention

=> Agree that the UE should be allowed to signal that it supports 1 cell in one band in case of dual band DF-3C
=> The CR is postponed

R2-141084 Correction of the Multiflow dual-band capability signaling NSN, Qualcomm Incorporated CR 25.331 A REL-12 HSDPA_MFTX-Core
=> Not treated

R2-141085 Correction of physical channel combinations with Multiflow operation NSN, Qualcomm Incorporated CR 25.302 F REL-11 HSDPA_MFTX-Core, RANimp-DC_HSUPA
=> Remove "RANimp-DC_HSUPA" WI code
=> the CR is agreed in principle

R2-141724 Considerations on Multiflow and DC-HSUPA requirements Qualcomm Incorporated Disc
- ALU thinks that this makes sense but wonders where the change would be done. Qualcomm thinks this should be added in stage 2 and if we find any place in stage 3 where the requirement in Rel-11 was added.
- Huawei wants to ensure that when we re-configure from DC_HSUPA and DF-DC to DF-DC only we should fall back.

=> For DF-4C and DC-HSUPA to be configured simultaneously, the assisting secondary serving cell should be part of the secondary active set.
=> Noted

9.3 WI: Other Rel-11 WIs

i.e. for WIs for which RAN2 is not prime responsible WG.

9.3.1 WI Four Branch MIMO transmission for HSDPA

(4Tx_HSDPA-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111393)
WI was closed at RAN-58. Only corrections, if any, expected.

R2-141369 Correction on using HS-DSCH CQI reporting tables for 4Tx-HSDPA Huawei, HiSilicon CR 25.331 F REL-11 4Tx_HSDPA-Core
- ALU can we come up with a future compatible wording, for example all HS-DSCH physical layer category extensions added up to the current release.

=> For Rel-11 we will include the actual extension number and for Rel-12 the rapporteur will make the future compatible change
=> The CR is agreed in principle

9.3.2 WI MIMO with 64QAM for HSUPA

(MIMO_64QAM_HSUPA-Core, leading WG: RAN1, REL-11, started: Dec. 11, closed: Dec. 12, WID: RP-121794)

WI was closed at RAN-58. Only corrections, if any, expected.

No contributions

9.3.3 WI UTRAN aspects of Single Radio Voice Call Continuity from UTRAN/GERAN to E-UTRAN/HSPA

(rSRVCC-RAN_UTRA-Core, leading WG: RAN3, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111334)
WI was closed at RAN-58. Only corrections, if any, expected.

No contributions

9.3.4 Others

(HSPA_UL_TxDiv-CL-Core, leading WG: RAN1, REL-11, started: Dec.10, target: Dec.12, WID: RP-120367)
The Core part of this WI was closed at RAN-58. Only corrections, if any, expected.

(HSPA_UL_TxDiv-OL-Core, leading WG: RAN4, REL-11, started: Dec.10, closed: Dec. 12, WID: RP-120367)
WI was closed at RAN-58. Only corrections, if any, expected.

(8C_HSDPA-Core, leading WG: RAN1, REL-11, started: Dec.10, closed: Sep. 12, WID: RP-101419)
WI was closed at RAN-57. Only corrections, if any, expected.

No contributions

9.4 WI: TEI11

R2-141152 Clarification to configuration of the list of cells to be excluded from inter-frequency detected set measurements Intel Corporation CR 25.331 F REL-11 TEI11

- ALU thinks this is a change in behaviour. Broadcom agrees that this is not a correction.
- ALU Why was this originally done? Intel thinks that is was done to align with the current measurement configuration.
- Intel is not sure what the original intention. Huawei indicates that it was added under frequency specific list, but it turned out that it ended up as an event specific list.
- Qualcomm agrees with the intention but is not sure what happens when you get a new list as a different event? Do you replace what you had before? Broadcom thinks that this makes sense.
- NSN was the feature added in Rel-10? Intel – the list to exclude was added only in Rel-11
- Chair: how do we handle the case where we get two different lists in two different measurement events for the same frequency?

=> Agree that for inter-frequency the UE should not maintain a separate list per event
=> FFS how the UE handles the case where a new measurement ID with a different list is provided to the UE
=> The CR is postponed

R2-141252 Multicarrier configuration in handover to UTRAN Ericsson Disc

- Broadcom remembers discussing this in the past, so what is the motivation to do it now. In LTE we don't include CA during the handover. Ericsson thinks this is beneficial for the user performance and to have a seamless handover.
- Huawei thinks that the size of the RRC signal will be larger and may increase the handover failures. Ericsson thinks that in the failure cases the network doesn't have to configure you in multicarrier
- ALU wonders how do we know what to configure unless the UE gives a lot of measurement information. Ericsson indicates that even for DC-HDSPA we assume similar coverage and the UE only measures on one frequency. The control is on the network side and we don't need the measurements.
- Orange is interested in these types of enhancements, but it should be left up to the RNC to determine when to do it and for which types of measurements.
- Qualcomm is also interested in these types of changes.

- TIM sees a benefit to include these enhancements and thinks that in some scenarios the impact to the user may be quite large, for example when you move from a higher bandwidth to a lower bandwidth in UMTS.
- ALU would like to study this further and determine whether the list of configuration is complete.
- NSN thinks there are other features we can include to increase user performance, such as MIMO, etc. Ericsson thinks that this is a good question and to simplify the additions we focused the more widely deployed features, such as multi-carrier.

=> Agree to study the addition of multi-carrier configuration in handover to UTRAN command. Companies should also study which features should be considered.
=> Noted

R2-141253 Multi-carrier configuration in Handover to UTRAN command Ericsson CR 25.331 B related to R2-141252 REL-11 TEI11, RANimp-DCHSDPA, RANimp-DC_HSUPA, RANimp-MultiBand_DC_HSDPA, 4C_HSDPA-Core, 8C_HSDPA-Core
=> Not treated

R2-141277 MFBI signaling with Inter-frequency neighbour cell info and extended EARFCN/E-UTRA Frequency bands Ericsson CR 25.331 F REL-11 TEI11
=> Not treated

R2-141771 MFBI remaining open issues Ericsson Disc REL-11 TEI11
Issue 1 - Inter-frequency neighbour cells with overlapping bands (SIB11/11bis)
- Qualcomm wants to make sure that there is no need to have intelligence in the UE and that there should be restrictions in the network. Intel shares the concerns from Qualcomm
- ALU thinks that for MFBI it has to be done this way and it has to be clearly specified in the spec.

=> Each occurrence of the IE “frequency info” in inter-frequency cell info list will have one corresponding entry in Multiple Frequency Info List FDD. The first appeared freq uses the first entry. The second appeared freq uses the second entry and so on. If the freq does not have an overlapping band, there shall be an empty entry.
=> The specification will capture how the “New inter-frequency cells” should be configured: frequency info appears once for the first occurrence and followed by MD for any following entries with the same UARFCN. All cells with the same UARFCN have to be listed contiguously

Issue 2 - Mismatch between UARFCN stored in CELL_INFO_LIST and PRIORITY_INFO_LIST
- Intel thinks that for legacy case there is no mismatch between CELL_INFO_LIST and SIB19.

=> For each unsupported freq in SIB19 UTRA priority list, the UE needs to check if this freq has any overlapping band in the CELL_INFO_LIST. If you stored this frequency in the CELL INFO LIST then you need store the same one in the variable PRIORITY_INFO_LIST
=> Noted

✉ **Email discussion n. 1 to review CRs capturing MFBI agreements (Ericsson)**
Scope: Review draft CRs resolving MFBI issues
- Rel-10 CRs capturing agreements from R2-141771
- Rel-11 CRs capturing agreements from RAN2#85

Deadline: 1 week before the submission deadline
Outcome: Proposed CRs for RAN2#86

R2-141595 Correction to E-UTRAN - 1.28Mcps TDD Handover Ericsson, CATT CR 25.331 F REL-11 TEI11
[Late]

- Intel wonders if we should specify more specifically the message. Ericsson thinks it can be signalled with different messages.
- Chair: do we need to indicate any other WI code? Broadcom thinks this was introduced in LTE-L23

=> The CR is agreed in principle

R2-141596 Correction to E-UTRAN - 1.28Mcps TDD Handover Ericsson, CATT CR 25.331 A REL-12 TEI11

[Late]

=> The CR is agreed in principle

R2-141690 Clear the variable C_RNTI when the UE enters CELL_DCH state Qualcomm Incorporated CR 25.331 F REL-11 TEI11

- Broadcom this is from R99. In which case do you go from CELL_FACH to CELL_DCH in the CELL_UPDATE confirm.
- Broadcom is not convinced of the use case and the problem.
- ALU wonders if there is a problem with TDD. Qualcomm is not aware about any specific problem for TDD.
- Qualcomm indicates that a similar CR in 2003 was previously agreed in RAN2 but not approved in RAN plenary 22, due to the CR not being essential.

=> The CR is not agreed

10 UTRA Release 12

10.1 WI: Further EUL Enhancements

(EDCH_enh-Core, leading WG: RAN2, REL-12, started: Dec. 13, target: Jun. 14, WID: RP-140127)
In RAN2#85bis priority will be given to the RAN2 specific topics 10.1.1 and 10.1.2. Contribution on 10.1.3 and 10.1.4 can be submitted for information purposes but will not treated until RAN1has progressed a bit more.

10.1.1 Improvements to Access Control

10.1.1.1 Differentiation of access control

Contributions should focus on mechanisms to differentiate access delays based on network assigned group.
- What parameters are used to differentiate access per group (e.g. delay/block access) and how are they used by the UE?
- How the access groups are assigned and what messages will be used.
- Discuss whether access control will be applicable to DCCH/CCCH and how to handle the PCH state with non-seamless transmission case (CELL_UPDATE with cause UL data transmission)?

R2-141240 Discussion on access control for CELL_FACH state and CELL_PCH state with seamless transition Broadcom Corporation Disc

- Huawei wonders what the use case is for the RLC issue. Broadcom thinks that depending on the transmission delays some problems can be cause if the UE has RLC retransmissions.
- Qualcomm would like to be able also control the DCCH messages. Broadcom is concerned with signalling especially if we have NAS signalling. The network can always release the traffic.
- Broadcom is concerned with what do we at relocation? Ericsson thinks that we can use the same as existing ACB mechanisms, we clear at relocation.
- Broadcom thinks there is no need to use RRC connection setup.
- NSN wonders what it is the use case for Radio Bearer Release. Broadcom indicates that you may want to change the priority if there is another bearer still configured.

=> Noted

R2-141269 Further considerations on differentiated access control Ericsson Disc
=> Noted

R2-141271 Broadcasting access control actions for NW assigned groups Ericsson Disc
- Huawei: in 2.1.2 it is proposed to have sub-groups. What is the use of these sub-groups? Ericsson indicates that it would still be beneficial to only block some UEs within an access group. Qualcomm thinks that 16 groups may be sufficient but do not see a use case to add additional granularity to differentiate within the group.
- Broadcom wonders what is the purposes of the synchronization. Ericsson thinks that the network needs to know when the UEs acquire the SIB and apply the blocking. Qualcomm doesn't think we need this complexity.

Proposal 1: The paramaters to control UE accesses when in CELL_FACH state and PCH state (with seamless transition to CELL_FACH) shall be broadcast in a new System Information Block, SIBx.

- Broadcom thinks that we should try to re-use the SIBs. Qualcomm prefers to add a new SIB as we can improve the update mechanisms.
- Broadcom thinks that if we add new mechanisms to acquire the SIB more often we should have a unified mechanisms with other features such a WLAN.
- Ericsson thinks that we can use the value tag, but then we have the value tag wrap around issue.

Proposal 6: When UE in CELL_FACH state or PCH state (with seamless transition to CELL_FACH) becomes unblocked, they will apply a deterministic delay before it accesses the RACH or common E-DCH.

- Qualcomm indicates that for their proposal they have a max delay and here this is a fixed delay per group.

Proposal 7: The access control parameters broadcast in the new SIBx shall consist of a list of maximum size 16 (one for each defined Access Group). Each entry in the list consists of an action (Block/Unblock) which is be to applied by the UE, and sub-group information to allow NW to differentiate between users within the same Access Group.

=> Noted

R2-141371 Discussion on Access Group based access control enhancements Huawei, HiSilicon Disc
=> Not treated

R2-141586 Access Control Improvements Alcatel-Lucent Disc
- Broadcom thinks we don't know the AC after the initial NAS request. ALU thinks that we need to think about this and whether we will block such services that are emergency.
- Chair: companies need to think about this issue and how to determine what type of AC is accessing the system

=> Noted

R2-141730 Enhancements to access control Qualcomm Incorporated Disc

Proposal 1 **Proposal: RAN2 should consider access delay as part of the parameters and actions related to the access groups. The delay control should based on a configurable uniform delay distribution: each UE delays its access attempt by waiting for a random amount of time that is uniformly distributed in the range [0, Tdelay], where Tdelay is signalled by the RAN.**

Discussion on whether we have a completely block or whether we have a delay in access
- ALU thinks that by using a delay timer you can set the timer such that you can block or unblock. Ericsson indicates that if we use a timer then the network may not known when the UE is access again. Qualcomm thinks that it is one of the trade-offs, if we block/unblock we will have a RoT issues (all UEs will access at the same time). Ericsson thinks that we can further control the UEs in sub-groups, with C-RNTI for example.
- Huawei doesn't see a clear gain and how UL congestion is improved.

=> We agree that for each access group the SIB will indicate block/unblock

Discussion on what happens after we unblock the UEs
1. fixed delay per sub-group (can be per UE) within a group

2. fixed delay per group
3. random uniform delay
4. zero delay – when you are unblocked you just access

- Huawei thinks option 3 is more complicated for the delay. Qualcomm thinks that you will have some spikes.

=> noted

R2-141273 Text Proposal for Stage 2 description of Access Control in connected mode Ericsson TP 25.300 REL-12 EDCH_enh-Core

=> Not treated

Agreements:

- We agree that the 'group access control' will not be configured per radio bearer or traffic type. It will be per UE. A UE can be configured with at most one access group.
- The group based access control mechanism will apply only to DTCH. The group access control will not be applicable to signalling messages.
- The messages used to configure the UE with the 'access group' are Radio Bearer Setup, Radio Bearer Release and Radio Bearer Reconfiguration messages. The 'access group' information should be cleared when SRNS relocation occurs.
- The maximum number of access groups which can be defined by the NW is 16
- The paramaters to control UE accesses when in CELL_FACH state and PCH state (with seamless transition to CELL_FACH) shall be broadcasted in a new System Information Block, SIBx. FFS whether we need to enhance the SIB update/reading mechanism.
- We agree that for each access group the SIB will indicate block/unblock
- We agree that after an access group is unblocked the UE can access the system after a fixed delay. FFS whether the fixed delay is zero or if there is a need to specify a delay per group.

10.1.1.2 Per CN domain wait timer

Discussions on remaining open issues:
- Applicability of "Per CN domain time" to other messages such as CELL UPDATE
- Extension of legacy wait timer and for which messages

R2-141239 Discussion on Wait Time Enhancements Broadcom Corporation Disc

Discussion on the NAS interaction issue:

- ALU thinks that going from 15s to 30mins is quite considerable. Current extended wait timers are handled in NAS. We should contact CT1.
- ALU wonders what and how to ask CT1?
- Qualcomm thinks that we need to ask CT1. Broadcom thinks that we can do it like the extended wait time but then NAS needs to do all this.
- Broadcom thinks that if the wait time is per domain then it may need to be handled by the NAS as the RRC connection request is not per domain.
- Qualcomm thinks that we list the two options:
  - We do it in the AS stratum – up to what value is acceptable
  - We do it like the extended access barring
- Broadcom is not convinced with the feature now and we cannot agree without first discussing with CT1.
- Qualcomm asks whether we can have per CN wait timer without wait time value extension.
- Broadcom thinks we also need to notify the NAS if one of the CN domains is blocked regardless of whether we extend the wait timer or not

=> We will send an LS to CT1

=> Noted

R2-141777 (draft) LS to CT1 on per CN domain timer Huawei, HiSilicon LSout REL-12 EDCH_Enh-Core

- Ericsson thinks that we should distinguish between the two options, telling the NAS or keeping the wait timer mechanism in the AS.

- Qualcomm thinks that we need to indicate that RAN2 discussed on option to solve the problem of the AS blocking the other connection, by informing the NAS.
- ALU thinks that we should also notify CT1 about the Group Access class mechanism, for example we are introducing access control (blocking/unblocking) of DTCH traffic irrespective of the access class.
- Ericsson doesn't know exactly what we can ask. ALU we can notify them what we are doing and whether there are any particular concerns if we block AC 11-15.
- Chair: we can ask if CT1 thinks if there are specific requirements for the high priority AC 11-15 that RAN2 should be aware for these classes.
- Qualcomm thinks that this is more SA1.

=> The LS is revised in R2-141784

R2-141784 (draft) LS to CT1 on per CN domain timer Huawei, HiSilicon LSout to: CT1 REL-12 EDCH_Enh-Core

=> The LS needs to be updated and will be completed via email discussion

=> The LS is revised in R2-141790 (email discussion)

✉ **Email Discussion 2 on LS to CT1 on the per CN domain wait timer (Huawei)**
Scope: Agree on final LS to CT1
Deadline: one week after RAN2#85bis
Outcome: Final LS to CT1 (R2-141790)

R2-141272 Further considerations on Other Access control improvements Ericsson Disc

=> Not treated

10.1.1.3 Other

Additional contributions on motivating the need of additional enhancements in Rel-12 for access control:
- SIB3 reading enhancements
- DSAC/PPAC in CELL_DCH

R2-141368 Considerations on access control parameter updates in CELL_DCH Huawei, HiSilicon, NSN, NTT DOCOMO, INC. Disc

Proposal 1: It is proposed that the DSAC and PPAC information could be included in UTRAN Mobility Information message.

Proposal 2: It is proposed that the DSAC and PPAC information could be included in Signalling Connection Release message and Radio Bearer Release message.

- Ericsson does not see the need for this. Broadcom does not see the need either and doesn't think we need to do in all messages. It is a corner case.
- Ericsson indicates that the motivation for the CN domain wait timer was that the DSAC/PPAC were not highly deployed and now we are enhancing the DSAC/PPAC.
- Broadcom thinks that we fixed a few things in Rel-10.
- Chair we need to consider the priority of these enhancements

=> We will have this enhancement in Rel-12

- Broadcom thinks that UMI is sufficient. NSN wonders if it also covers the Radio Bearer Release message. Broadcom would be ok to have in Radio Bearer Release only.
- Ericsson thinks that the Radio Bearer Release is a more suitable as you will be sending the message anyways.
- NSN wants to check if only UMI works in this case. Broadcom thinks that we can send the UMI before sending the release.

=> Noted

R2-141372 Considerations on SIB3 reading enhancements Huawei, HiSilicon Disc

=> Noted

R2-141731 Extending the SIB value tag range Qualcomm Incorporated Disc

- Broadcom how will this work for legacy UEs? Qualcomm the network would maintain two value tags.
- NSN would like to understand how big is the impact of reading SIB3. Qualcomm if you are at a cell border you may increase the SIB load. Broadcom thinks that this prevents cashing the SIB.

- Ericsson wonders if this would require us to update the MIB size. Qualcomm indicates that it was already done.
- Ericsson has a preference for the extended value tag and it can be used for the new access control.
- Huawei are we limiting to only SIB3 and SIB5. Qualcomm thinks that these are the two we've seen issues with and if we see other SIBs have these issue.
- Ericsson wonder if we can reuse this for Access control mechanism. Broadcom thinks that this makes sense and we can also use it for WLAN interworking
- ALU we can consider using both the legacy value tag and new value tag to be more intelligent.
- Chair can we consider this as part of the SIB enhancements

=> Way forward – to fix the SIB3 wrap around issue we will consider increasing the SIB value tag and we will do it as part of the SIB enhancement WI.
=> Noted

Discussion on the priority of the two remaining topics:
- Per CN domain timer
- Extended wait timer
- DSAC/PPAC in CELL_DCH

=> We agree to prioritize DSAC/PPAC.
=> We will wait for the LS from CT1 for the wait timer issues and make the final decision next meeting

10.1.2 Improvements to EUL coverage by TTI switching

A running Stage 2 description of the feature should be presented

R2-141044 LS on E-DPCCH to indicate TTI Switching (R1-140904; contact: Qualcomm) RAN1 LSin to: RAN2 REL-12 EDCH_enh-Core
=> Noted

10.1.2.1 UPH measurement improvements

Contributions should focus on the open issues for UPH measurements:
- Type of filter and where the filtering is applied (e.g. modified L1 filtering or higher layer filtering on top of L1 measurements)
- Discussion on configuration parameters and the triggering criteria (e.g. TTT, hysteresis, threshold, etc).
- What MAC format to use for reporting (same legacy SI format or new SI format)
- Is there a need to report a filtered UPH using a RRC message?

R2-141274 Filtered UPH measurements for improved EUL coverage Ericsson Disc
- ALU wonders if we provide the set of information in a new measurement control
- Huawei wonders what is the use case for the repletion. Ericsson thinks that we should be able to resend the message. Huawei thinks that the ACK/NACK mechanisms for the SI, so we don't this parameter.

=> Noted

R2-141276 Running Stage 2 CR for EUL coverage improvements Ericsson CR 25.319 B REL-12 EDCH_enh-Core
=> Not treated

R2-141410 Considerations on UPH measurements improvements Huawei, HiSilicon Disc
- Qualcomm wonders what are the main differences between the Ericsson proposals and Huawei's. Huawei indicates that it is the use of the legacy MAC and that the filtering is in the MAC.
- Qualcomm wonders why are we doing the filtering in the MAC. Huawei thinks we should do the layer 3 mechanisms but in the MAC.

=> Noted

R2-141431 Considerations on initial TTI selection enhancements Huawei, HiSilicon Disc
- Ericsson supports this proposal

- ALU wonders how does this impact the prioritization rules. Ericsson indicates that the prioritization will still be the same. Qualcomm wonders if the UE will be required to do it.
- ALU is this for intra? Huawei this is only for the serving cell.
- Qualcomm would want to ensure that this is optional and it is only for the serving cell.

=> UE can report both Ec/No and RSCP of the serving cell in the "Measured results on RACH" during the RRC Connection establishment and Cell Update procedures. This is optional and best effort as per legacy “measured results on RACH”
=> Noted

R2-141647 UPH and Traffic Volume enhancements for activation of DC-HSUPA Qualcomm Incorporated Disc
[Late]

=> Not treated

Discussion on R2-141274 and R2-141410
UPH filtering
- Qualcomm wants to clarify where we do the filtering. ALU wonders if we allow RRC measurement report.
- NSN wonders if it is ok to apply layer 3 filtering on top of the layer 1 filtering and we may delay the trigger. Qualcomm thought about it and the minimum delay is 100ms so it is not too critical. If we changed the layer 1 measurement, that would require RAN4 changes.

MAC format to use (legacy or new MAC PDU)
- NSN has a preference to use legacy MAC PDU. Qualcomm prefers the legacy but we should discuss the benefits of the new one. Ericsson thinks one of the benefits was to decouple this MAC PDU from existing SI. And also to reuse the MAC PDU for the change indication.
- Broadcom would also prefer the legacy SI. If we keep on reserving LCH ID we will run out of LCH-ID.

Agreement
- We will apply layer3 filtering on top of the layer 1 UPH measurements.
- The UPH filtering and triggering criteria will be specified in the MAC
- New triggers for filtered UPH are introduced when the UPH becomes worse or better than an absolute threshold. The details of the exact triggers are FFS
- The Layer 3 filtering and reporting parameters will be configured in the UE via RRC Measurement Control are "Time-to-trigger", "Hysteresis margins", "Thresholds".
- The UPH measurement will be send via the MAC
- FFS if the legacy SI will be used with a reserved LCH-ID or a new MAC PDU will be introduced

10.1.2.2 TTI switching aspects

Discussion on how to report the TTI switch decisions to the non-serving cells.
Additional details on agreed aspects (e.g. what are the pre-configuration parameters for different TTI lengths)

R2-141275 TTI switching mechanism for improved EUL coverage Ericsson Disc
- Huawei is concerned that in some cases " For IE’s not explicitly signaled in the pre-configuration (EDCH Info), the UE shall consider this to mean that it should continue to use the current setting after the TTI switch” it may not work. For example for DC-HSUPA we cannot re-use the current setting.
- Qualcomm wonders why we didn’t discuss the proposal to send the commit message using a MAC PDU message. Ericsson didn’t raise to RAN1 because it works as existing SI.
- Qualcomm – does the Commit MAC PDU replace the ACK for the order. No
- NSN wonders why we have the commit MAC PDU if we have the ACK/NACK for the order. Qualcomm this is used for notifying the non-serving Node Bs.

=> Noted

R2-141428 Considerations on notifying non-serving Node B for enhanced TTI switching Huawei, HiSilicon DIsc
=> Noted
R2-141435 Considerations on pre-configurations for enhanced TTI switching Huawei, HiSilicon DIsc
=> Noted
R2-141646 Enhanced TTI switching Qualcomm Incorporated Disc
[Late]

=> Noted

Discussions on R2-141275, R2-141428, R2-141435, and R2-141646

Discussion on notifying non-serving Node B
1. Use of a MAC PDU to send a commit
2. Use of E-DPCCH to indicate the change (e.g. reserved E-TFCI))
3. Do nothing -

- NSN thinks there is an option of the RNC telling the non-serving Node Bs without any commit message. Qualcomm thinks that would require the activation of the TTI switch to be delayed to ensure that the non-serving Node Bs are notified.
- NSN we will have to specify an activation time from the reception of the time. Qualcomm is concerned.
- Ericsson thinks that since we don't have a reserved E-TFCI for the 10ms TTI, this may require more work in RAN1/RAN2
- ALU thinks that RAN1 should compare the two.
- Broadcom supports sending the new MAC PDU.
- Ericsson thinks that the data is designed to be more reliable and if it fails the likelihood of failure is because of the E-DPCCH.
- Huawei wonders if the MAC PDU has to be a new MAC PDU. We can also re-used the legacy PDU and use some of the other fields.

=> Working assumption that will use the MAC PDU.
=> We send an LS to RAN1 indicating that RAN2 has made the following working assumption: The UE will send a MAC PDU (18bits) to indicate the TTI switch. .

Discussion on pre-configuration
- ALU wonders what happens if we want to switch back? Do we have store the configuration we were currently using before switching. Huawei thinks we can consider configuring both. Broadcom – are we using the target cell pre-configuration? No
- Broadcom wonders how long do we keep the current configuration? We also need to consider how we reconfigure certain parameters.
- NSN thinks that the assumption was that we can switch in both directions. Broadcom thinks that the critical part of the feature is that we do fast but then the network can reconfigure you with the other parameters.
- Broadcom thinks we need to handle checking the configuration upon reception. Broadcom thinks that if we are allowed to receive both then we should check both upon reception and not wait until we do the switch.

Agreements:
- The UE will be provided with a configuration for each TTI length and the UE can use the configurations to switch between different TTI configurations. FFS if the UE has to validate both configurations at the time of reception.
- To notify the non-serving Node Bs, a working assumption is made that a MAC PDU will be sent to the serving Node B from the UE to confirm the TTI switch.
- The serving Node can notify the RNC of the TTI switch.
- After receiving a notification from the serving Node B that the TTI switch is under way, the RNC signals the new TTI length to all non-serving Node Bs.

R2-141778 (Draft) LS to RAN1 on TTI switching indication from UE Ericsson LSout REL-12 EDCH_enh-Core
=> The LS is agreed in R2-141787

R2-141779 (Draft) LS to RAN3 on TTI switching Ericsson LSout REL-12 EDCH_enh-Core
=> cc RAN1
=> The LS is revised in R2-141788

R2-141788 (Draft) LS to RAN3 on TTI switching Ericsson LSout to: RAN3 REL-12 EDCH_enh-Core
=> The LS is agreed in R2-141789

10.1.3 Enhancements to enable high user bitrates

Contributions discussing RAN2 specific impacts on the three different areas (e.g. DTX/DRX enhancements, improved granting, and improved power control) can be submitted for information purposes. Documents in this AI will be de-prioritized pending RAN1 progress on these topics

No contributions

10.1.4 UL control channel overhead reduction

RAN2 is not expected to treat this topic unless RAN1 asks feedback from RAN2.

No contributions

10.1.5 CRs

Initial stage 2 CRs for existing agreements (For 25.300 a TP should be provided)
Initial stage 3 CRs for existing agreements on 10.1.1.1 and 10.1.1.2
Initial stage 3 CRs for agreements on 10.1.2

No contributions

10.2 WI: UMTS Mobility enhancements for Heterogeneous Networks

(UTRA_hetnet_mob-Core, leading WG: RAN2, Started: Dec.13, June 14, WID: RP-140463)
The work should focus on the aspects or problems already studied as part of the "Study on UMTS Heterogeneous Networks".

R2-141058 Reply LS to R2-133683 on extending the size of the neighbour cell list (R4-141084; contact: Ericsson) RAN4 LSin
to: RAN2 REL-12 UTRA_hetnet_mob-Core
=> Noted

R2-141782 (Draft) Reply LS on extending the size of the neighbour cell list Huawei LSout
to: RAN4 REL-12 UTRA_hetnet_mob-Core
=> Not agreed

10.2.1 UE speed based mobility

Contributions could consider whether there is a need for extended measurement IDs in small cell scenarios or other additional stage-3 issues on eSCC.

No contributions

10.2.2 Mass small cell deployment

Contributions should focus on LS received from RAN4 (R4-141084)

R2-141438 Discussion on remaining open issues for NCL extension Huawei, HiSilicon Disc
Proposal 1: it is proposed RAN2 to agree the NCL extension for both intra-frequency and inter-frequency NCL, the size is suggested from 32 to 64 for each frequency.

Proposal2: it is proposed RAN2 not to extend the number of cells, for both event results and measured results, to be included in the measurement report message, i.e., measurement report is not touched.

Proposal3: it is proposed RAN2 not to touch MBMS and Positioning related specs if NCL extension is introduced.

Proposal4: It is proposed RAN2 to discuss how to use of NCL extension under multicarrier and multi-flow scenarios under DCH state;

Proposal4bis: it is proposed RAN2 to agree that NCL extension should be used for intra-frequency measurement only for primary carrier under multicarrier or multi-flow case under DCH state.

Proposal5: It is proposed RAN2 to discuss and agree to introduce a new SIB to contain extended NCL under non-DCH state.

- Broadcom: what does P4 mean? Huawei: For dedicated meas control, NCL extension should be applied to the primary carrier only. Qualcomm: we don't see a problem that the restriction is required if we extend intra-freq NCL. NSN: what is the consequence of P2? Huawei: saves signalling, and 32 is more than enough. Qualcomm: impact in RAN3 is this for non DCH case only? Huawei: Yes.

=> Noted

R2-141448 Draft CR to 25.331 on the introduction of neighbour cell list extension Huawei, HiSilicon CR 25.331 B REL-12 UTRA_hetnet_mob-Core

=> The CR is postponed

R2-141727 Considerations on NCL extension Qualcomm Incorporated Disc

Proposal 2 *Proposal 1: The size of the intra-frequency NCL should remain 32 (as legacy);*

Proposal 3 *Proposal 2: RAN2 could consider extending the inter-frequency NCL size to 64, as long as there is a cap of 32 cells per carrier (no impacts to RAN4 performance requirements).*

- Huawei: Your analysis for intra-freq is based on the RAN4 suspected performance impacts, we think it's possible to extend without impact to the performance. We also think that the small cells will extend the actual NCL the UE could see. NSN: for P2 why do you have 64, RAN4 asked for 80? Qualcomm: this could change, but 64 was what was proposed earlier in RAN2.

=> Noted

Discussion on R2-141727 & R2-141438

Way forward for Inter-freq, NCL extension?

Broadcom: for Stage 2 we could make a broad comment, so say that for mass cell deployment the inter-freq NCL is extended. Qualcomm: for this WI we could agree to increase number of cells, but number of freq remains as 2, then it becomes specific to hetnet.

Agreements
- The inter-frequency NCL will be extended to 64 in total (for both dedicated and SIB), with a max of 32 cells per freq (with a maximum of 2 freq) - we will capture this in the stage 2 document (25.300), without specifying explicitly the number. The final number for the stage 3 signalling of the inter-freq NCL is subject to change due to the IncMon WI. This does not imply that we will have 2 capabilities (i.e one for hetnet and one for IncMon)

After Comeback
- Ericsson - RAN4 should not do work specifically for HetNet and the work should be limited to IncMon. ALU thinks that anyways RAN4 doesn't need to change performance. Ericsson thinks that the maximum number is 64.

=> RAN2 does not expect RAN4 to do any work related to increased inter-frequency neighbour cell list specific for the HetNet WI. The required RAN4 spec changes and work will be covered by the IncMon WI.

- Ericsson – We should not agree to the actual number 64
- Ericsson doesn't think we should do stage 3. ALU still doesn't understand why we can't do stage 3 now. Ericsson thinks that they are still discussing the number. ALU thinks that we at least know that 64 is acceptable from performance and we can even put it to more as we have in the past allowed signalling to signal more and the RAN4 requirement determine the actual numbers.

After second comeback
- Huawei indicates that the existing signalling allows 64 in SIB.

=> We will agree to do stage 3 NCL extension as part of the HetNet WI. The stage 3 will include the dedicated signalling and it will go up to 64 cells.
=> No need to send an LS to RAN4/RAN3
=> From WI perspective we agree that there is no need to do any work in RAN4 for NCL extension for HetNet WI
=> We agree that no additional UE capability will be required just for HetNet NCL extension, as UE capability will be part of the IncMon.

R2-141728 Optimized RRC signaling to minimize PSC confusion in CELL_DCH Qualcomm Incorporated Disc
- Broadcom: in some cases the UE will not be able to distinguish between the 2 cells, dependant on the vicinity of each cell. Qualcomm: we agree there could be cases, but we think that the network would not assign same PSC in close proximity. Ericsson: RAN3 decided this method could be done without any changes, and was captured in an Annex of 25.467. Qualcomm: we are not sure this is the same method as what was captured in RAN3, we would like to check the RAN2 specifications to see if anything is needed.

=> Noted

10.2.3 Others

R2-141071 Discussing the way forward for setting cell specific TTT NSN Disc
- Broadcom: is it 2 events configured with one Id? NSN: there is one meas control. Broadcom: we consider this changes the meaning of the 'cells for measurement', and would not want this change. Qualcomm: we support this, as a signalling optimisation. Ericsson: we don't see a need for this.

=> the proposal is not agreed
=> Noted

R2-141440 Considerations on event 1D reporting on the secondary downlink frequency Huawei, HiSilicon Disc

Proposal 1: It is proposed that IEs could be considered for event 1D configuration and reporting on the secondary downlink frequency, i.e. the IE "Intra-frequency cell info list on secondary UL frequency", "Intra-frequency measurement reporting criteria on secondary UL frequency", "Measured results on secondary UL frequency".

Proposal 2: It is proposed that event 1D can be allowed to configure on at most one secondary downlink frequency in addition to the primary downlink frequency.

Proposal 3: It is proposed that the IE "Frequency info" in the IE "Intra-frequency cell info on secondary UL frequency" in the variable CELL_INFO_LIST could be used for indicating one secondary downlink frequency on which the event 1D is configured.

Proposal 4: It is proposed that event 1D can be only configured on the secondary UL frequency if DC-HSUPA operation is configured.

- NSN: the proposals are not aligned with the use cases/scenarios discussed previously.
  Broadcom: how are we introducing this? as an inter-freq or intra-freq on another freq.
- Ericsson: we consider the main use case DF-DC is now not considered for the WI, so we think that we don't necessarily have justification for having this e1D on the secondary.
  Qualcomm: we want to align this with UEs not needing CM.

=> we agree that this should be done with a new inter-freq meas event.

- FFS: whether new event 2X (change of best cell) can be configured on all secondary downlink frequency or at most one.
- FFS. Whether this is linked to inter-freq meas without CM capability bit
- FFS: how is the initialisation of the AS done, reporting of the 2ndary freq is this cell (as it has been on the freq)
- A wayforward paper is to be proposed, with stage 3 details. With description of how this will work

=> Noted

R2-141772 Way Forward for Event 2x on the secondary downlink frequency reporting on the secondary downlink frequency Huawei, HiSilicon Disc REL-12 UTRA_hetnet_mob-CoreR2-141440

=> This document will be used as an input to an email discussion

=> Noted

✉ **Email Discussion 3: New inter-frequency event for HetNet Mobility (Huawei)**
Scope: Two phase email discussion:
- 1st phase discuss open issues and agree on way forward for each open issue
- 2nd phase review the CRs capturing the agreements

Outcome: Draft CRs to be submitted in RAN2 #86
Deadline: 1st phase completes on April 30th and Second phase on May 8th.

R2-141441 Considerations on active set on the secondary downlink frequency Huawei, HiSilicon Disc
=> Not Treated

R2-141447 Discussions on UE capability issues in mobility enhancements for Heterogeneous Networks Huawei, HiSilicon Disc
=> Not Treated

R2-141580 Mobility Estimation Alcatel-Lucent Disc
=> Not Treated

R2-141619 Further considerations on the secondary frequency 1D event NSN Disc
- Huawei: we thinks it's intra-freq meas, like with DC-HSUPA. Broadcom: we think it's easier as inter-freq. Qualcomm: it is inter-freq meas.

=> Noted

10.2.4 CRs

Stage 2 CR and Stage 3 CRs capturing agreements from last meeting

R2-141443 Draft CR to 25.331 on the introduction of extending enhanced Serving Cell Change to Event 1C Huawei, HiSilicon CR 25.331 B REL-12 UTRA_hetnet_mob-Core
- Interdigital: we need to improve the new description of the target cell HS-SCCH order.
-NSN: we should separate the e1c and e1d descriptions, so make the e1c ESCC distinct from e1d ESCC.

- Interdigital: we need to link this with some capability/configuration, maybe distinct from e1d ESCC variable.
- Broadcom: How does the UE know it should do it? May need a NW configuration.

=> CR is postponed to email discussion

=> We will have a 2 phase email discussion (until the next meeting). Phase 1 for key details on stage 3 details. Phase 2 an updated 25.331 for the enhanced Serving Cell Change to Event 1C

✉ **Email Discussion 4: Enhanced Serving cell change for HetNet Mobility (Huawei)**

Scope: Two phase email discussion:
- 1st phase discuss 1 for key details on stage 3 aspects
- 2nd phase review the CRs capturing all agreements

Outcome: Draft CRs to be submitted in RAN2 #86

Deadline: 1st phase completes on April 30th and Second phase on May 8th.

R2-141444 Introduction of Event 1D reporting on the secondary downlink frequency Huawei, HiSilicon CR 25.306 B REL-12 UTRA_hetnet_mob-Core

=> Not Treated

R2-141445 Introduction of Event 1D reporting on the secondary downlink frequency Huawei, HiSilicon CR 25.331 B REL-12 UTRA_hetnet_mob-Core

=> Not Treated

R2-141446 Draft CR to 25.306 on the support of extending eSCC to Event 1C Huawei, HiSilicon CR 25.306 B REL-12 UTRA_hetnet_mob-Core

=> Not Treated

R2-141450 TP to 25.300 on the introduction of mobility enhancements for Hetnet Huawei, HiSilicon TP 25.300 REL-12 UTRA_hetnet_mob-Core

Type is changed to TP (from CR)
- we don't need the detailed changes on e1d and e1c, only change required is for NCL.
- NCL part needs to capture what is agreed, and should state as Neighbour Cell List
- Qualcomm: we would like to have a list of what is introduced for hetnet, then reference to the other stage 2 specs for the detail.

-=> the CR is revised in R2-141773

R2-141773 TP to 25.300 on the introduction of mobility enhancements for Hetnet Huawei, HiSilicon TP 25.300 REL-12 UTRA_hetnet_mob-Core

- Remove intra-frequency and spelling
- Broadcom thinks we should have an introduction and reference the stage 2 specs where the features will be described (25.308)

=> Postponed

R2-141451 CR to 25.308 on the introduction of extending enhanced Serving Cell Change to Event 1C Huawei, HiSilicon CR 25.308 B REL-12 UTRA_hetnet_mob-Core
- Broadcom/Interdigital: which is target cell? Target cell is the new best cell in the current AS.
- we should add more description related to the difference between current ESCC. NSN: we should be explicit on which e1c causes this.

=> the CR is revised in R2-141774

R2-141774 CR to 25.308 on the introduction of extending enhanced Serving Cell Change to Event 1C Huawei, HiSilicon CR 25.308 B REL-12 UTRA_hetnet_mob-Core
- The wording needs to be changed. The changes should be captured in a different paragraph.

=> As a starting point for the CR we have the following "The second step above, can also be performed, if the UE transmits a MEASUREMENT REPORT 1C that request the removal of the serving HS-DSCH cell and the best cell reported in measured results in the Event 1C report is the active set"

=> The discussion on the proper definition of when the procedure is applied can be part of the first phase of the email discussion related to R2-141443
=> the affected specs should be in one line and remove TR.
=> Postponed

R2-141452 Draf CR to 25.306 on the introduction of Event 1D reporting on the secondary carrier Huawei, HiSilicon CR 25.306 B REL-12 UTRA_hetnet_mob-Core
[withdrawn]

R2-141525 Introduction of Event 1D reporting on the secondary downlink frequency Huawei, HiSilicon
CR 25.306 B REL-12 UTRA_hetnet_mob-Core
=> Not Treated

10.3 WI: BeiDou Navigation Satellite System (BDS) for UTRA

(LCS_BDS-UTRA-Core, leading WG: RAN2, started: March 13, closed: Dec.13, WID: RP-130416)
This WI has been closed at RAN-62 and only corrections, if any, are expected to be submitted.

No contributions

10.4 WI: Enhancements to SIB

(UTRA_SIBenh-Core, leading WG: RAN2, started: Dec. 13, target: June 14, WID: RP-140131)

R2-141045 LS on Enhanced Broadcast of System Information (R1-140906; contact: Ericsson)RAN1 LSin
to: RAN2 REL-12 UTRA_SIBenh-Core
=> Noted

R2-141070 LS on Enhanced BCH parameters (R1-141755; contact: Ericsson)RAN1
- Broadcom wonders if it is a different TB size.
- Broadcom doesn't think we need to introduce a new transport channel. Ericsson thinks we should revisit this next meeting but we need to find a way to distinguish between the new BCH and legacy BCH. Qualcomm thinks that one options is to have a different System Information 2.

=> Noted

10.4.1 BCH2 design aspects

Contributions should address BCH2 design aspects, taking into account the RAN1 agreements from last meeting.

R2-141254 System information content on the legacy and new BCH channels NSN Disc
- Ericsson wonders if for the third case the contents are completely different and how it impacts the scheduling and what are the impact on UE complexity. NSN thinks that the third scenario may be more complex.
- ALU wonders how this works and how the UE knows which SIB and where to acquire and is the proposal to allow all this different options. NSN we focus more on the first and third scenario.
- Broadcom wonders how the UE knows how to differentiate between scenarios. NSN considers that the network would have to indicate whether the information is the same.
- Qualcomm wonders what the use case is for option 3. NSN thinks that one good use case could be for IncMon. Ericsson is not sure this is a good scenario. Qualcomm wonders how the cell list will be sent for IncMon. Ericsson thinks that it would be with a new SIB that can signal up to 48 (scenario three)
- ALU thinks it is important to identify for which SIBs we do it for.

=> Noted

R2-141255 System information content change notification NSN Disc

- Ericsson also thinks it is beneficial that if there is a change only in BCH2 you don't wake up the legacy UEs
- Ericsson wonders if there is a need for a second MIB value tag or do we continue to use the one we have. NSN we can consider both.
- ALU thinks we should pay attention to additional proposals to enhance the value tag from proposals in FEUL. Ericsson thinks that the MIB value tag is already longer than the SIB value tag.

=> Noted

R2-141257 System information content update enhancements NSN Disc
- ALU wonders if this can be one particular implementation options. NSN yes
- Ericsson thinks this is conditional on whether we broadcast the same content.

=> Noted

R2-141419 Further considerations on BCH2 mechanism Huawei, HiSilicon Disc
- NSN wonders if we can use the same scheduling blocks structure as today, blocks 1 and 2, or whether we would need a new block? Huawei thinks that we can consider potentially a new structure as discussed in the additional enhancements. Ericsson thinks we should reuse as much as existing SIBs, but we can discuss potential enhancements.

=> Noted

R2-141512 Introduction of a second broadcast channel Ericsson Disc
- Broadcom wonders if there are different transport channel characteristics. Ericsson thinks that maybe the TB sizes, TTI may be different. They may not be exactly the same but it has not been decided. Broadcom thinks that different TB sizes will have some impact and same TB will be simpler for the UE. Ericsson thinks that it will have some impact on the structure of the SIB. Broadcom thinks that it should be agnostic to the RRC level. Qualcomm thinks that RAN1 should make this decision. ALU thinks that we should at least advice RAN1 that from a RAN2 perspective there may be some associated complexity with the introduction on new TB sizes. NSN thinks that we should first discuss what the impacts are. If we look at the RAN1 discussions there are similar discussions.
- Broadcom wonders if we need to introduce a new logical channel. Ericsson didn't think there is a need for a new logical channel, we can use BCCH. Broadcom thinks that you need to differentiate and map them to the S-CCPCH.

Proposal 2b: A REL-12 UE shall be able to monitor two S-CCPCHs simultaneously.

Proposal 2c: A REL-12 UE shall be able to read S-BCH mapped onto a different S-CCPCH than PCH and FACH/CTCH. **Proposal 2d:** A REL-12 UE may skip reading S-BCH during CTCH occasions in Idle mode and CELL_PCH/URA_PCH state.

- NSN wonders why we have to prioritize CTCH when we agreed to monitor two S-CCPCH simultaneously. Ericsson – because in idle mode we would have three.

Proposal 2e: A REL-12 UE shall be able to receive S-CCPCH in CELL_FACH when HS-DSCH is used
- Qualcomm: Does this impact the H-RNTI requirement in CELL_FACH? Ericsson thinks that there will be no second H-RTNI added for S-BCH reception.

=> Noted

Discussions on R2-141255, R2-141254, R2-141257, R2-141419, and R2-141512:
- How to send the SIBs over a legacy and a new BCH channel with either the same or different content.
  1. Same SIBs
  2. Same SIBs different content (different SIBs) – need for indication and identify which SIBs we need it for

- NSN unless we find a use case we should have a different SIB. ALU thinks that we should study it a bit further and it would depend whether we make it mandatory for some UEs, and in that case there may be some use of different SIBs.
- ALU thinks that this decision may impact RAN3 and whether they need to introduce mechanisms to send the same content.

Scheduling information of BCH2

- Scheduling block for BCH2 (SB3)
    - Structure used?

- NSN wonders if we can allow SB2 to be transmitted on S-BCH? Qualcomm thinks that the main point is that the characteristics of the new Scheduling Block are different and are defined for the S-BCH. Qualcomm thinks that reusing SB2 may create a little complexity. Ericsson thinks that SB3 would be scheduled differently than SB2.
- NSN wonders if we can allow SB3 on legacy BCH. Huawei would like to study it a bit further. Ericsson wonders what the need may be to transmit SB3. Huawei wants to improve the acquisition of the SB3.

- Scheduling of scheduling block
    1. Re-use the same mechanism and provide it in the MIB
    2. Have a new mechanisms to send SB3 on S-BCH following the MIB use a pre-defined offset

- Qualcomm has a preference for Ericsson proposals. Huawei wonders if we need a mechanism to indicate if have SB3. Ericsson – we would indicate the scheduling interval in the MIB. Huawei wonders what the different is if we have to add things to the MIB. Ericsson is trying to optimize the number of bits need for the MIB
- ALU would like to see some quantitative analysis for the need of this as we don't have the same problem with the MIB. Ericsson is more concerned with the load we are adding. Broadcom wonders if we segment the MIB. In the spec we can, but it doesn't happen in reality.
- Qualcomm thinks that we should also discuss whether we allow both options.
- Ericsson thinks we should discuss how to signal the indication, by using the value tag? Ericsson thinks that a 4 bit value tag is sufficient. Qualcomm also assumes that we will use the value tag mechanisms and use 4 bits.

- Ericsson we also need to consider the need for BCH modification time. Ericsson/Broadcom/Qualcomm don't think that we need a new modification period. NSN thinks we may need the modification time in the case where we change both channels. Huawei what is the impact if we introduce the BCH modification time

Enhancements to Scheduling information

- The SIB scheduling information on S-BCH may refer to the scheduling information on the legacy BCH in case the scheduling is similar (instead of broadcasting the SIB scheduling information explicitly).

- Broadcom wonders what is the benefit to schedule the same thing on both SIBs. Ericsson is offing a possibility and it doesn't need to be the same SIB. For example we can schedule the NCL SIB at the same time as the SIB11bis.

How to handle the System Information change

1. Separate indication for BCH2 (e.g. without waking up the legacy)
2. Single indication that wakes up both legacy and BCH2 UEs

- ALU wonders if we can have an indication to do both. If we have legacy change, we send legacy indication and if we have a change in both we send an indication for both.
- Qualcomm wonders what happens if we change some configuration. Ericsson: We can the legacy procedures and don't need enhancements.
- NSN is concerned that SB3 value tag is excluding the possibility to use SB2 to schedule the S-BCH. Chair: if we agree to allow that possibility we can revisit the naming.
- Ericsson thinks that the size of the value tag should be discussed in the next meet.

Agreements
- Introduce a transport channel S-BCH for the second broadcast channel, which is mapped onto

S-CCPCH.

- New SIBs introduced in REL-12 or later are introduced on both BCH and S-BCH
- We can schedule the same SIB type with the same content on both BCH and S-BCH, FFS whether we will allow different SIBs content
- UE shall be able to monitor two S-CCPCHs simultaneously
- UE shall be able to read S-BCH mapped onto a different S-CCPCH than PCH and FACH/CTCH.
- UE may skip reading S-BCH during CTCH occasions in Idle mode and CELL_PCH/URA_PCH state.
- UE shall be able to receive S-CCPCH for S-BCH in CELL_FACH when HS-DSCH is used
- A new Scheduling Block 3 (SB3) is introduced to provide the scheduling information for the SIBs on S-BCH. The SB3 is transmitted on the S-BCH and SB3. FFS if we allow to be transmitted on legacy BCH.
- FFS how the scheduling of the SB3 is performed.
- We will introduce a Xbit value tag for SB3, where X is FFS.
- Introduce the SB3 value tag in Paging Type 1 and SYSTEM INFORMATION CHANGE INDICATION message to indicate a change in system information on S-BCH. A change in legacy and S-BCH will be signalled by setting both legacy and new indication. FFS whether we need to have a new BCH modification time for S-BCH.

10.4.2 Improvements to legacy BCH

Contributions on improvements to legacy BCH

R2-141423 Discussion on Deferred Reading of system information for SIB enhancements Huawei, HiSilicon Disc

Proposal1: It is proposed RAN2 to discuss which SIBs introduced from Rel-11 can be applied with deferred reading mechanism to improve the BCH capacity.

Proposal2: It is proposed RAN2 to discuss if SIB deferred reading should be a mandatory feature for the UE.

- ALU - Isn't it already mandatory? Broadcom it was introduced as optional. ALU wonders if it is mandatory for which UEs is it mandatory? Huawei thinks it Rel-12 UEs, but we should link to a feature.
- Broadcom wonders what is the purpose of making it mandatory. If the UE doesn't do it it is a UE problem. Ericsson thinks that this requirement is not putting too much additional requirements as UEs that support CS fallback already have to support this. From the network perspective there is a benefit as the network can determine the repetitions periods based on the knowledge of the UEs supporting deferred reading.

- Broadcom would not like to have Rel-12 mandatory features and would like to link to a feature or a new capability. Qualcomm has the same concerns.
- Qualcomm thinks that we can study whether we apply DMCR once we have an idea of how the Rel-12 SIBs will look on a per feature basis and decide then.
- Ericsson thinks that it is important to have DMCR.

=> Noted

R2-141426 Discussion on overhead reduction mechanisms for SIB enhancements Huawei, HiSilicon Disc

Proposal1: it is proposed to change the presence of the IE SIB_OFF/SIB_REP from MP to MD for new SIBs introduced from Rel-12.

Proposal2: It is proposed RAN2 to discuss the overhead reduction mechanisms for header part suggested in this paper.

- ALU does the first proposal apply to SB3. Huawei yes it can apply. Ericsson thinks that the enhancement don't only apply to SIBs on S-BCH and we can apply the enhancements

on the SB1 and SB2. Broadcom doesn't think we can enhance the Scheduling Bocks without impacting legacy. Qualcomm thinks you can do it without impacting the legacy UEs.
- NSN wonders what are the gains/benefits of these additional optimizations. Ericsson thinks in general that we should see how much do we save on the legacy BCH.
- Ericsson – we should also consider how often we can use the optimisation.
- Chair: for the next meeting more details are required to understand the proposal and whether these enhancements can be done without impacts to legacy UEs and if there is impacts then we can only perform these enhancements to new SB.
- NSN – for proposal 2 the segmentation information was added as a protection mechanisms in some corner cases. Broadcom indicates that in the spec there is no such protection as even if you receive 5 segments and the count is 4 we still decode them. Huawei also considered the reason why we have these redundancy mechanism, but it seems that the UE are not making use of this information. Ericsson thinks that the UE can start system information acquisition without receiving the scheduling information.
- Chair: for proposal 2 companies need to check how this information is used by the UE and whether it is used

=> Noted

R2-141498 BCH enhancements Ericsson DIsc

Proposal 5: The SEG_COUNT is not needed when "SIB_POS offset info" is included for REL-12 system information.

- Ericsson indicates that the presence of "SIB POS offset info" will indicate to the UE how many segments there are and the SEG COUNT

Proposal 6: The UE is allowed to re-use received segments of a SIB in the next repetition period when the UE did not receive a system information change (or the timer for that SIB did not expire in case of timer based SIB).

- Broadcom and Qualcomm agree with Proposal 6
- Huawei would like to understand. Broadcom thinks that it is beneficial for the UE receive seg. 1, 2,4, 5 and wait and only receive 3 in the next time. Broadcom thinks that this was actually done to put restrictions to the network scheduling. ALU thinks that in some cases you would discard all the segments but only if there is system information change.

=> Noted

Agreements
- We will study the possibility to apply deferred reading mechanism on Rel-11 SIBs and new Rel-12 SIBs.
-

10.4.3 CRs

Stage 2 TP for 25.300

R2-141514 RAN2 specification impact second broadcast channel Ericsson DIsc
=> Not treated

R2-141519 Introduction of a second broadcast channel Ericsson CR 25.331 B REL-12 UTRA_SIBenh-Core
=> Not treated

R2-141522 Text Proposal for Stage 2 description of second broadcast channel Ericsson TP 25.300 REL-12 UTRA_SIBenh-Core
- Qualcomm thinks that it would be nice to have a high level description of the mapping of logical channel/transport channel/physical channel. ALU indicates that it has to also be in 25.302.
- NSN wonders if we want to adapt a certain style of capturing agreements, bullet point of free flowing. ALU we should be careful that the description is describing technical details and if we want to include implementation/network options we should put it in an Annex.

=> The TP is postponed

10.5 WI: UMTS Heterogeneous Networks enhancements

(UTRA_hetnet_enh-Core, leading WG: RAN1, started: Dec.13, target: Jun. 14, RP-140463)

10.5.1 E-DCH decoupling

Contributions on this topic should focus on the impact to RAN2 of E-DCH decoupling and specific actions and decisions RAN2 has to make to progress the work.

R2-141072 Further considerations for E-DCH decoupling feature specification NSN Disc

- Broadcom wonders how UL Power control works. NSN thinks that the F-DPCH is used in the same way as the legacy way.
- ALU initially RAN1 indicated that this can also be done for legacy UEs, but the management was done in the RAN3. Can we still allow the legacy UEs to use decoupling? NSN thinks that this applicable to only Rel-12 UEs. Huawei thinks that technically the UE can be configured. Ericsson thinks that this wasn't part of the objective.
- Ericsson thinks that maybe we can LS with RAN1/RAN3 to indicate our findings on the feature inter-working.
- Huawei thinks that the network shouldn't configure the UE with the other features when E-DCH decoupling is configured.
- Ericsson confirms that it is only for Rel-12 according to the WI description
- Huawei thinks we need to indicate to RAN3 that the serving HS-DSCH and serving E-DCH cells are in different Node B and ask RAN3 if there is any impacts or if they can re-use existing Iub signalling.

Proposal 1: Agree on a simple way forward considering that E-DCH decoupling could be specified by reusing existing triggers to keep the lowest specification and implementation cost.

- ALU is the understanding that the network can configure their measurement events. NSN thinks that the E-DCH decoupling is likely to happen when event 1A is triggered and there can be other triggers.
- ALU is making an observation that we are using a lot of the measurement IDs. NSN doesn't think we need any other measurements configured other than the configuration of the active set. Qualcomm and Huawei don't think we need to add more events.

Proposal 2: Agree on a simple way forward considering that E-DCH decoupling could be specified by reusing existing signalling procedures to save network and UE implementation cost.

Proposal 3: Discuss further the feasibility of reusing legacy signalling for E-DCH decoupling.

- Qualcomm wonders if there is a need to add an IE for the activation of E-DCH

Proposal 4: Discuss the above options for CPC interworking with E-DCH decoupling.

- Huawei doesn't want to impact the existing functionality
- Qualcomm thinks we should disable the orders for CPC when decoupling is configured.
- NSN thinks that we can make it a working assumption, but we should check a bit more carefully.

Proposal 5: Discuss the above options for Dual Cell E-DCH interworking with E-DCH decoupling.

- Qualcomm prefers option one but thinks that this should also be applicable to multi-carrier with single UL.
- Huawei wants to confirm that the assumption is that the order is always sent from the serving HS-DSCH.
- Qualcomm thinks that all the orders should come from the serving HS-DSCH. NSN thinks that the activation/deactivation is sent from any of the carriers configured in the DL.
- Huawei – let's make a working assumption that all orders need to be sent from the Node B where the serving HS-DSCH.

Proposal 6: Discuss the above options for UL CLTD interworking with E-DCH decoupling.

- Qualcomm thinks that the complexity for UL CLTD is similar to CPC and would prefer to disable. NSN thinks that it is a bit more complicated as we even change the mode of operation with the HS-SCCH. We need to change carefully offline how to control the mode.

Proposal 7: Discuss the above option for UL MIMO interworking with E-DCH decoupling.

- NSN indicates that there is a way to potentially make UL MIMO work by sending F-TPICH from serving E-DCH cell. Qualcomm thinks that the same could be applied to UL CLTD. NSN agrees.
- Ericsson thinks RAN1 should look at this. NSN doesn't think there is any changes to legacy procedures.
- NSN thinks that if can allow UL CLTD and UL MIMO to be used in combination with E-DCH decoupling then the feature can work with F-TPICH.
- Qualcomm the discuss on the order is the same as for UL CLTD.

=> Noted

R2-141456 Discussion on the E-DCH decoupling solution Huawei, HiSilicon DIsc
=> Noted

Agreements:
- E-DCH decoupling can be supported with existing measurement events and no new triggers/events need to be added.
- The UE will not perform dual E-AGCH monitoring
- E-DCH decoupling can be configured by reusing existing signalling procedures and messages

Working assumptions:
- When CPC and E-DCH decoupling is configured the UL DRX and UL DTX HS-SCCH orders are disabled.
- When Dual Cell E-DCH is configured with multi-carrier downlink, HS-SCCH orders to activate/deactivate are allowed. The order is sent from the Node B where the serving HS-DSCH is. Tell RAN3 that coordination between Node Bs is required.
- For the combination of E-DCH decoupling and UL CLTD or UL MIMO, it is FFS whether the features work when HS-SCCH orders are disabled. If they don't work then UL CLTD and UL MIMO should be fully disabled. Otherwise the features can be configured with the HS-SCCH orders disabled. To allow the features to be configured, F-TPICH can be transmitted on the serving E-DCH

R2-141780 (Draft) LS on E-DCH decoupling NSN LSout to: RAN1 RAN3 REL-12 UTRA_hetnet_enh-Core

- Ericsson thinks we should word it in a better one.
- Ericsson wonders what needs to be coordinated in RAN3.

=> We will only cc RAN3 with no particular actions
=> The LS is revised in R2-141783

R2-141783 (Draft) LS on E-DCH decoupling NSN LSout to: RAN1 cc: RAN3 REL-12 UTRA_hetnet_enh-Core
=> The LS is agreed in R2-141785

R2-141076 Introduction of E-DCH decoupling NSN CR 25.302 B REL-12 UTRA_hetnet_enh-Core
=> Not treated

R2-141077 Introduction of E-DCH decoupling NSN CR 25.306 B REL-12 UTRA_hetnet_enh-Core
=> Not treated

R2-141078 Introduction of E-DCH decoupling NSN CR 25.319 B REL-12 UTRA_hetnet_enh-Core
=>Not treated

R2-141079 Introduction of E-DCH decoupling NSN CR 25.331 B REL-12 UTRA_hetnet_enh-Core
=> The CR is merged in R2-141776

R2-141080 Introduction of E-DCH decoupling NSN TP 25.300 REL-12 UTRA_hetnet_enh-Core
=> The TP is merged in R2-141775

R2-141459 Draft CR to 25.331 on the introduction of E-DCH decoupling operation Huawei, HiSilicon
CR 25.331 B REL-12 UTRA_hetnet_enh-Core
=> The CR is merged in R2-141776;

R2-141460 Draft CR to 25.306 on the introduction of the E-DCH decoupling operation Huawei, HiSilicon
CR 25.306 B REL-12 UTRA_hetnet_enh-Core
=> Not treated

R2-141461 Draft CR to 25.300 on the introduction of the E-DCH decoupling operation Huawei, HiSilicon
CR 25.300 B REL-12 UTRA_hetnet_enh-Core
=> The TP is revised in R2-141775

R2-141775 Draft TP to 25.300 on the introduction of the E-DCH decoupling operation Huawei, HiSilicon, NSN TP 25.300 REL-12 UTRA_hetnet_enh-Core
=> The stage 2 description should be in 25.319
- Broadcom – do we allow DCH with E-DCH decoupling. NSN thinks we can and wonders if we need to put it in the stage 2 description.
- Broadcom the first change is not related to the transport channel.
- ALU wonders what is the word we will use for LPN. Maybe it doesn't even have to be LPN. NSN thinks that RAN1 is introducing a definition. Options, small cell, pico cell, LPN, no differentiation.

=> Not agreed

R2-141776 Introduction of E-DCH decoupling Huawei, HiSilicon, NSN CR 25.331 B REL-12 UTRA_hetnet_enh-Core
- Broadcom thinks that the note doesn't mean anything "if any of the above procedures results in different HS-DSCH and E-DCH serving cells, the UE behaviour is unspecified except when Serving E-DCH cell decoupling is configured by higher layers"
- Qualcomm suggests to change it to "if UE does not supports E-DCH serving decoupling and if any of the above procedures results in different HS-DSCH and E-DCH serving cells, the UE behaviour is unspecified"
- Broadcom thinks we should remove E-DCH

=> Postponed

10.5.2 CIO range expansion improvements

Consider the introduction of signalling for CIO adaptation for co-channel and multi-carrier deployments. Documents will depend on RAN1 status and agreements on this topic.

R2-141584 CIO and antenna configuration Alcatel-Lucent DIsc
- Huawei thinks that RAN1 is going to send an LS
- Qualcomm thinks this proposal is better than reporting, but we have some concerns for the cases when the UE changes modes while you are doing the evaluation conditions.

=> Noted

10.5.3 Others

R2-141463 Overview of the UMTS Heterogeneous Networks enhancements Huawei, HiSilicon DIsc
=> Noted

10.6 WI: DCH Enhancements for UMTS

(UTRA_DCHenh-Core, leading WG: RAN1, started: Sept.13, target: Jun. 14, RP-131357)

Contributions should focus on RAN2 related aspects and Initial Stage 2 CR capturing RAN1 agreements if any

R2-141648 RAN2 impacts from DCH enhancements Qualcomm Incorporated Disc
[Late]

- NSN indicates that there are two sets of enhancements – full and partial. This enhancement falls under the full DCH enhancement set.
- Ericsson thinks this should be done at the physical layer and not at the RLC, we would like to limit the impacts.
- Broadcom wonders how it will be done in the physical layer. Qualcomm thinks that it is feasible by just passing the three to the PHY layers.
- Broadcom wonders how you handle them at the reception side. Do you have to split the class A, B, C bits before passing them to the vocoder or do you just pass them as one to the higher layers. Qualcomm thinks that this is how it is done and there isn't much impact on the UE side.
- Huawei wonders if there is a problem if RAN1 does it?
- Ericsson thinks that there is more impact on the network if we do it at the RLC level.

=> RAN2 prefers to not impact the RLC layer. Therefore, we suggest to RAN1 that the concatenation is done in the physical layer.
=> We will write an LS to RAN1 indicating our preference
=> Noted

R2-141781 (Darf) LS on DCH enhancements Qualcomm LSout to: RAN1 cc: RAN3 REL-12 UTRA_DCHenh-Core[CB}
=> change RAN2#85 to RAN2#85bis
=> With this change the LS is agreed in R2-141786

R2-141649 UE capabilities and sub-feature dependencies for DCH enhancements Qualcomm Incorporated Disc
[Late]

=> Not treated

R2-141650 25.300 TP Introduction of DCH Enhancements Qualcomm Incorporated TP 25.300 B REL-12 UTRA_DCHenh-Core
[Late]
=> This should be a TP=> The TP is postponed

10.7 Other UMTS Rel-12 WI/SIs

Input to any other Rel-12 WI/SI not explicitly listed above. Note that TEI12 should be submitted in 10.6
(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)

R2-141146 Introduction of the new Band combinations related to Band XXXII Ericsson CR 25.327 B REL-9LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core
=> Add Qualcomm as co-sourcing company
=> The CR is agreed in principle

R2-141147 Introduction of the new Band combinations related to Band XXXII Ericsson CR 25.327 B REL-10 LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core, 4C_HSDPA-Core
=> Add Qualcomm as co-sourcing company
=> The CR is agreed in principle

R2-141148 Introduction of the new Band combinations related to Band XXXII Ericsson CR 25.327 B REL-11 LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core, 4C_HSDPA-Core
=> Add Qualcomm as co-sourcing company
=> The CR is agreed in principle

R2-141149 Release 12 specification updates according to the introduction of band combinations related to Band XXXII in earlier releases Ericsson CR 25.327 B REL-12 LTE_UTRA_SDL_BandL-Core
- ALU what happens to references? Should they also be voided.
=> NSN will check how to handle the references
=> Add Qualcomm as co-sourcing company
=> The CR is in principle agreed

R2-141150 Introduction of the new Band combinations related to Band XXXII Ericsson CR 25.331 B REL-12 LTE_UTRA_SDL_BandL-Core
[withdrawn]

R2-141151 Introduction of the new Band combinations related to Band XXXII Ericsson CR 25.331 B REL-12 LTE_UTRA_SDL_BandL-Core
- ALU thinks that the Band XXXIII should be capture similar to the way we have done in previous releases. In FDD Frequency band 3 in the same entry as the Rel-10 IE.
=> We will make the change in the tabular
=> The latest version of the spec should be used
=> Add Qualcomm as co-sourcing company
=> The CR is agreed in principle with these changes

R2-141416 CR to 25.331 on correction to the inbound mobility to a shared CSG cell Huawei, HiSilicon CR 25.331 F REL-12 EHNB_enh3-Core
- Ericsson thinks is not needed. The IE is enumerated, therefore it is always sent.
- ALU the network can ignore. The UE should not put FALSE and say it is a member in case on non-shared RAN.
=> The CR is postponed

10.8 UMTS TEI12

Small Technical Enhancements affecting UMTS Rel-12 that do not belong to any Rel-12 WI.
Note: A TEI proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

10.8.1 Cell Reselection during Common E-DCH transmission

Way forward on open issues (UE capability and whether cell reselection indication will be reported during collision resolution phase).
Stage 2 and 3 CRs

LSin

R2-141052 Reply LS to R2-134503 on cell reselection indication during common E-DCH transmission (R3-140461; contact: Huawei) RAN3 LSin to: RAN2 REL-12 Cell_FACH_enh-Core
=> Noted

R2-141411 Introduction of Cell reselection indication during uplink transmission with common E-DCH Huawei, HiSilicon CR 25.306 B REL-12 TEI12, Cell_FACH_enh-Core
=> Not treated

R2-141412 Introduction of Cell reselection indication during uplink transmission with common E-DCH Huawei, HiSilicon CR 25.321 B REL-12 TEI12, Cell_FACH_enh-Core
=> Not treated

R2-141413 Introduction of Cell reselection indication during uplink transmission with common E-DCH Huawei, HiSilicon CR 25.331 B REL-12 TEI12, Cell_FACH_enh-Core
=> Not treated

R2-141414 Introduction of cell reselection indication during uplink transmission with common E-DCH Huawei, HiSilicon CR 25.319 B REL-12 TEI12, Cell_FACH_enh-Core
=> Not treated

R2-141429 Remaining open issues for cell reselection indication Huawei, HiSilicon DIsc
=> Noted

Discussion on cell reselection indication during collision resolution phase
- Ericsson is concerned about the case when TEBS is not equal to zero and the SI is sent as a standalone. Ericsson thinks that the simplest is that you don't send it.
- Broadcom what should we do when we can't send it. In periodic we drop it. Qualcomm is ok to follow today's rule.

=> We will report cell reselection indication during contention resolution
=> As legacy behavior the UE will not be allowed to transmit the SI as standalone when TEBS different zero during contention resolution. The UE will drop the SI if it cannot send.

Discussion on cell reselection capability
- Ericsson would like to have the capability linked to some of the feature in FE-FACH. For example, if the UE supports any of a set of Rel-11 FE-FACH features.
- Broadcom thinks we can use a similar link to features as used for the partitioning case in FE-FACH.

=> working assumption, in Rel-12 the UE may supports cell indication if it supports any of these features "common E-RGCH" or "Stand alone HS-DPCCH. FFS if any other FE-FACH features.

✉ **Email discussion n. 5 to review stage 3 CRs for cell reselection indication (Huawei)**
Scope: review stage 3 CRs for the introduction of cell reselection indication
Outcome: Stage 3 CRs for RAN2#86
Deadline: Week before submission deadline for RAN2#86

10.8.2 Other TEI12 topics

Documents in this category may be de-prioritized

R2-141241 Corrections to GNSS Acquisition Assistance Data Qualcomm Incorporated CR 25.331 F revision of Tdoc R2-140630 REL-12 LCS3-GNSS-UTRAN, TEI12
=> CR number in cover page should be deleted
- Ericsson wonders if this is a mandatory for Rel-12 and how will it work for legacy. Is it an essential enhancement that all Rel-12 supporting the feature should support. Qualcomm indicates that these changes were also done in LTE.
- Ericsson thinks that in the semantics we should specify what happens if both IEs are present. If the new one is present the UE should ignore the old.

=> The CR is postponed

R2-141366 Cleanup corrections on abbreviations to TS 25.305 Rapporteur CR 25.305 D REL-12 TEI12
=> Not treated

R2-141247 Introduction of the UL CLTD feedback from the Multiflow assisting cell NSN, Qualcomm Incorporated DIsc
=> Noted

R2-141248 Introduction of the UL CLTD feedback from the Multiflow assisting serving cell NSN, Qualcomm IncorporatedCR 25.308 B REL-12 TEI12, HSDPA_MFTX-Core, HSPA_UL_TxDiv-CL-Core
=> Not treated

R2-141249 Introduction of the UL CLTD feedback from the Multiflow assisting cells NSN, Qualcomm Incorporated CR 25.331 B REL-12 TEI12, HSDPA_MFTX-Core, HSPA_UL_TxDiv-CL-Core
=> Not treated

R2-141250 Introduction of the UL CLTD feedback from the Multiflow assisting cell NSN, Qualcomm Incorporated CR 25.306 B REL-12 TEI12, HSDPA_MFTX-Core, HSPA_UL_TxDiv-CL-Core
=> Not treated

R2-141251 Introduction of the UL CLTD feedback from the Multiflow assisting cell NSN, Qualcomm Incorporated CR 25.302 B REL-12 TEI12, HSDPA_MFTX-Core, HSPA_UL_TxDiv-CL-Core
=> Not treated

R2-141476 MEASUREMENT CONTROL message enhancement Ericsson DIsc
=> Not treated

11 Outgoing LSs and email discussions from UTRA session

11.1 Agreed outgoing LSs from UTRA session

This agenda item will be used during the meeting.

R2-141785 LS on E-DCH decoupling RAN2 LSout to: RAN1 cc: RAN3 REL-12 UTRA_hetnet_enh-Core
=> agreed

R2-141786 LS on DCH enhancements RAN2 LSout to: RAN1 cc: RAN3 REL-12 UTRA_DCHenh-Core
=> agreed

R2-141787 LS to RAN1 on TTI switching indication from UE RAN2 LSout to: RAN1 REL-12 EDCH_enh-Core
=> agreed

R2-141789 LS to RAN3 on TTI switching RAN2 LSout to: RAN3 cc:RAN1 REL-12 EDCH_enh-Core
=> agreed

11.2 Email discussions from UTRA

This section contains a preliminary list of email discussions. A complete list (see Annex F) will be provided to the email reflector after the meeting.

✉ **Email discussion n. 1 to review CRs capturing MFBI agreements (Ericsson)**
Scope: Review draft CRs resolving MFBI issues:
- Rel-10 CRs capturing agreements from R2-141771
- Rel-11 CRs capturing agreements from RAN2#85

Deadline: 1 week before the submission deadline
Outcome: Proposed CRs for RAN2#86

✉ **Email Discussion n. 2 on LS to CT1 on the per CN domain wait timer (Huawei)**
Scope: Agree on final LS to CT1
Deadline: Friday, April 11th
Outcome: Final LS to CT1 (R2-141790)

✉ **Email Discussion n. 3: New inter-frequency event for HetNet Mobility (Huawei)**
Scope: Two phase email discussion:
- 1st phase discuss open issues and agree on way forward for each open issue
- 2nd phase review the CRs capturing the agreements

Outcome: Draft CRs to be submitted in RAN2 #86
Deadline: 1st phase completes on April 30th and Second phase on May 8th.

✉ **Email Discussion n. 4: Enhanced Serving cell change for HetNet Mobility (Huawei)**
Scope: Two phase email discussion:

- 1st phase discuss 1 for key details on stage 3 aspects
- 2nd phase review the CRs capturing all agreements
Outcome: Draft CRs to be submitted in RAN2 #86
Deadline: 1st phase completes on April 30th and Second phase on May 8th.

✉ **Email discussion n. 5 to review stage 3 CRs for cell reselection indication (Huawei)**
Scope: review stage 3 CRs for the introduction of cell reselection indication
Outcome: Stage 3 CRs for RAN2#86
Deadline: Week before submission deadline for RAN2#86

12 Comebacks

This agenda item will be used during the meeting. No documents are supposed to be submitted by delegates.

12.1 LTE breakout session

Report from UP Session

R2-141800 Report from LTE UP Session
=> Noted

=> CB [LTE/UP] Work offline to add a note in PDCP specification from Rel-10 (R2-141801, CR 36.323, NTT DCM)

R2-141801 Clarification of CID reuse; NTT DOCOMO, INC.; CR; 36.323; F; related to R2-141707; REL-10; TEI10, LTE-L23;
=> CR is in principle agreed

=> CB [LTE/DC] Revised in: LS to RAN4 (CC RAN1) on Activation/Deactivation (R2-141803, NSN)

R2-141803 [DRAFT] LS on Activation/deactivation for Dual Connectivity; NSN; LSout;
=> Change "• PSCell (Primary" to "• Special"
✓ => With this change the LS on Activation/deactivation for Dual Connectivity to RAN4 (CC: RAN1) is approved in R2-141851

R2-141802 Capture SPS in MAC, Samsung, CR 36.321
=> CB: [LTE/eIMTA] Capture SPS in MAC (R2-141802, CR 36.321, Samsung)
- CATT thinks that RAN1 made some agreements related to SPS for eIMTA that might collide with our assumptions. This may have an impact on MAC and therefore we should probably postpone the MAC CR.
- CATT considers the RAN2 agreement still quite reasonable but would like to postpone agreement of the MAC CR
- Nokia thinks that the UE behaviour should be specified in normative text and not in notes. Ericsson thinks that the note is supposed to clarify what the UE is not required to do.

=> We stick to RAN2 agreement regarding SPS for eIMTA
=> CR is postponed

✉ **[LTE/eIMTA] SPS for eIMTA (Huawei)**
-Focus on Support of two interval SPS with eIMTA
-Can discuss relation to RAN1 agreements/assumptions

✉ **[LTE/eIMTA] Capture PDCCH monitoring behaviour and RACH procedure (if agreed) in MAC (CATT)**

12.2 UMTS breakout session

No contributions

12.3 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.

No contributions

12.4 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 (see Annex F) will be provided to the email reflector after the meeting.

- ✉ [Joint/WiFi] Introduction of WiFi Interworking in 25.300 (Intel) - Copy relevant aspects of the 36.300 CR - Reflect agreements from this week (UTRAN session) in running 25.300 TP => Intended outcome: Draft running 25.300 TP to RAN2-86
- ✉ [Joint/WiFi] Introduction of WiFi Interworking in 36.304 (Intel) - Reflect agreements from this week in running CR => Intended outcome: Draft running 36.304 CR to RAN2-86
- ✉ [Joint/UEPCOP] Running stage-3 CRs (ZTE) - Review 35.304 and 36.304 CRs in R2-141764 and R2-141765 - Check whether “stop timers” is clear and results in desired behavior. - Discuss whether the UE must not perform certain tasks when PSM is configured (e.g. TAU updates) => Intended outcome: 36.304 and 25.304 CRs for RAN2-86
- ✉ Email discussion: [LTE/CA] CA band combination capability signalling (Ericsson) - Discuss requesting of subset of the band combination by eNB (see R2-141494) - Discuss omitting UL band combinations for specific CA combinations (see R2-141172) - Discuss the need to extend the number of band combinations - Discuss from which release an enhancement should be introduced - Discuss how to further progress with legacy signalling in the future - Should discuss how to maintain compatibility of legacy UEs/NWs. => Intended outcome: Email discussion report and CRs to RAN2-86
- ✉ [LTE/DC] One week to agree LS to SA3 (Ericsson) - Attempt to answer the questions in LS R2-141841 from SA3 => Intended outcome: Approved LS to SA3 in R2-141844
- ✉ Email discussion: [LTE/DC] One week on running stage-2 CRs (DCM) - Reflect agreements from this week in running CR => Intended outcome: Endorsed running 36.300 CR
- ✉ Email discussion: [LTE/DC] Merge RAN3 input to RAN2 stage-2 CRs (DCM) - Merge endorsed RAN3 CR into running RAN2 CR - Identify possible need for alignment. => Intended outcome: Draft running 36.300 CR as input to RAN2-86
- ✉ [LTE/DC] SCG RRM (Samsung) - Discuss the FFSs on which assistance information to provide and for which SeNB cells to provide measurement results.
- ✉ [LTE/MBMS-MDT] eMBMS measurements for Logged MDT Stage-2 (MediaTek) - Aim to provide 37.320 CR capturing the agreements made so far => Intended outcome: Draft 37.320 CR for RAN2-86
- ✉ [LTE/MBMS-MDT] eMBMS measurements for Logged MDT (QC) - Progress stage-3 work according to agreements from this meeting - Aim to provide 36.331 CR using R2-141536 as baseline => Intended outcome: Email discussion summary and a draft 36.331 CR for RAN2-86
- ✉ [LTE/D2D] One week to endorse a running 36.300 CR (QC) - Based on draft CR in R2-141838 => Intended outcome: Endorse running 36.300 CR
- ✉ [LTE/D2D] User plane aspects of D2D Communication (QC) => Intended outcome: Email discussion report
- ✉ [LTE/D2D] Resource allocation details for D2D Communication (Ericsson) - Further details based on the agreements made so far - Progress e.g. the mode selection - Take into account progress in RAN1. => Intended outcome: Email discussion report
- ✉ [LTE/D2D] One week approval of LS on L1 ID (Ericsson)

✉ [LTE/eIMTA] Introducing eIMTA in 36.331 (CATT) - Review 36.331 CR in R2-141824 => Intended outcome: Endorsed Running 36.331 CR to RAN2-86

✉ [LTE/MTC-LC] One week to update the running stage-2 CR (Vodafone) - Use R2-141462 as baseline => Intended outcome: Endorsed running 36.300 CR

✉ [LTE/eIMTA] SPS for eIMTA (Huawei) - Focus on Support of two interval SPS with eIMTA - Can discuss relation to RAN1 agreements/assumptions

✉ [LTE/eIMTA] Capture PDCCH monitoring behaviour and RACH procedure (if agreed) in MAC (CATT)

13 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.

GCSE

Choice of scheduling period for MBMS:

R2-141171 Draft Reply LS to S2-140844 = R2-141060 on choice of scheduling period for MBMS; Huawei; LSout; LS01; LS answer to LSin R2-141060; REL-12; FS_LTE_GC;
=> CB: [LTE/GCSE] A draft reply LS on "choice of scheduling period for MBMS" to SA2 can be provided in R2-141762 (ALU)

R2-141762 Draft reply LS on "choice of scheduling period for MBMS" to SA2; contact: ALU
=> Remove "RAN2 would also like to point out that study on group communication for LTE concluded that the current radio configurations could support the group communication requirements."
✓ => With this change the reply LS on "choice of scheduling period for MBMS" to SA2 is agreed in R2-141853

GCSE QCIs and connected mode DRX:

R2-141373 [DRAFT] LS on GCSE QCIs and connected mode DRX; NSN; LSout; LS03; LS answer to LSin R2-141061; REL-12; GCSE_LTE;

R2-141697 [DRAFT] LS Response on GCSE QCIs and connected mode DRX; Alcatel-Lucent; LSout; LS03; draft response to LS (S2-140846) on GCSE QCIs and connected mode DRX ; REL-12; FS_LTE_GC ;

[Moved from 3.2 to 13]

Both Tdocs above not treated

eMBMS broadcast areas with EUTRAN Cell Granularity:

R2-141763 Reply LS on eMBMS broadcast areas with EUTRAN Cell Granularity; to SA2; CC CT3, CT4, RAN3, SA4; Contact: Vodafone
- Samsung understands that service areas are usually semi-statically allocated. But in GCSE the idea seems to be that the MBMS Service Areas are allocated more dynamically by the GCSE server. ALU thinks that the SAI would be allocated to a service when the service is created.

✓ => The Reply LS on eMBMS broadcast areas with EUTRAN Cell Granularity; to SA2; CC CT3, CT4, RAN3, SA4 is agreed in R2-141826

Approved LSs

This section contains a list of approved outgoing LSs (press F9 to update while the cursor is inside the list).

✓ => With this change the LS on "on provisioning of E-UTRA capabilities in GERAN" is approved in R2-141761

✓ => With these changes the LS on "LS on WLAN signal measurements for WLAN/3GPP Radio interworking" is approved in R2-141855

✓ => With this change the LS on "on increased number of LTE frequencies to monitor in UMTS" to RAN4 is approved in R2-141766

✓ => The LS on prioritizing MCG uplink transmission to RAN1 is approved in R2-141848

- ✓ => With these changes the LS on SFN handling in the dual connectivity is approved in R2-141849
- ✓ => With these changes the LS on the need to inform the MeNB of the delivered PDCP SN is approved in R2-141850
- ✓ => The reply LS on handling of subframe #6 in LTE_TDD_eIMTA; to RAN1 is approved in R2-141852
- ✓ => With this change the LS on "Resource allocation restriction and identification of low complexity MTC UEs" to RAN1 is approved in R2-141825
- ✓ => With this change the LS on Activation/deactivation for Dual Connectivity to RAN4 (CC: RAN1) is approved in R2-141851
- ✓ => With this change the reply LS on "choice of scheduling period for MBMS" to SA2 is approved in R2-141853
- ✓ => The Reply LS on eMBMS broadcast areas with EUTRAN Cell Granularity; to SA2; CC CT3, CT4, RAN3, SA4 is approved in R2-141826

14 Any other business

Future meeting dates
Click here for the overview of all RAN2 and RAN meeting dates.

Meeting schedule 2014/2015:

MEETING	DATES	LOCATION	HOST	CO-LOCATION
RAN2 #85	10 Feb. – 14 Feb. 2014*	Prague, Czech Republic	EF3	RAN 1/2/3/4/5
RAN #63	3 March – 6 March 2014 **	Fukuoka, Japan	ARIB, TTC	
RAN2 #85bis	31 March – 4 April 2014	Valencia, Spain	EF3	RAN2 only
RAN2 #86	19 May – 23 May 2014	Seoul, Korea	LG Electronics	RAN 1/2/3/4/5
RAN #64	10 June – 13 June 2014	Sophia Antipolis, France	EF3	
RAN2 #87	18 Aug. – 22 Aug. 2014	Dresden, Germany	EF3	RAN 1/2/3/4/5
RAN #65	9 Sep. – 12 Sep. 2014	Edinburgh, Scotland	EF3	
RAN2 #87bis	6 Oct. – 10 Oct. 2014	Shanghai, China	Huawei	RAN2 only
RAN2 #88	17 Nov. – 21 Nov. 2014	San Francisco, USA	NAF3	RAN 1/2/3/4/5 etc.
RAN #66	9 Dec. – 12 Dec. 2014 **	tbd, USA	NAF3	
RAN2 #89	9 Feb. – 13 Feb. 2015	Athens, Greece (tbc)	EF3	RAN 1/2/3/4/5
RAN #67	9 March – 12 March 2015 **	China		
RAN2 #89bis	20 April – 24 April 2015	Europe		RAN2 only
RAN2 #90	25 May – 29 May 2015	tbd, Japan	JF3	RAN 1/2/3/4/5, SA2
RAN #68	15 June – 18 June 2015 **	Malmö, Sweden (tbc)	EF3	
RAN2 #91	24 Aug. – 28 Aug. 2015	tbd, 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 (tbc)	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 (tbc)	EF3	

EF3: European Friends of 3GPP
NAF3: North American Friends of 3GPP
JF3: Japanese Friends of 3GPP

@: Also co-located: SA2, SA5, CT1/3/4/6
#: Also co-located: SA1, SA2, SA3, SA5, CT1/3/4/6
*: modified after TSG chairman's discussion at SA #57

**: 1 week TSG, starting on Monday

For plans for email discussions after RAN2 #85bis see Annex F.

15 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 #85bis. He thanked the European Friends of 3GPP for hosting this meeting.

TSG RAN WG2 chairman Henning Wiemann (Ericsson) closed the meeting on Friday April 4th, 2014 at about 17:00.

Annex A:
List of participants

The list of participants of this RAN WG2 meeting #85bis is will be attached to this report.

Total number of participants: 164 (registered before the meeting: 183)

Annex B:
List of Tdocs

The list of Tdocs of this RAN WG2 meeting #85bis is attached to this report.

Total number of Tdocs: 822 of which 43 Tdocs are not available, i.e. 779 Tdocs are available.

Annex C:
Incoming liaison statements for TSG RAN WG2 #85bis

RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-141042	Reply LS to R2-141012 on inter-RAT capability signalling for MFBI (GP-140235; contact: Huawei)	GERAN2	GP-140235	noted	no	
R2-141043	Reply LS to C1-140781 = R2-140027 on provisioning of E-UTRA capabilities in GERAN (GP-140245; contact: Huawei)	GERAN2	GP-140245	noted	R2-141761	
R2-141044	LS on E-DPCCH to indicate TTI Switching (R1-140904; contact: Qualcomm)	RAN1	R1-140904	noted	no	
R2-141045	LS on Enhanced Broadcast of System Information (R1-140906; contact: Ericsson)	RAN1	R1-140906	noted	no	
R2-141046	Response LS to S3-131152 = R2-140024 on parameter synchronization (R1-140941; contact: Qualcomm)	RAN1	R1-140941	noted	no	

RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-141047	Reply LS to S2-140560 = R2-140810 on ProSe Out of Coverage discovery (R1-140950; contact: Ericsson)	RAN1	R1-140950	noted	no	
R2-141048	LS on handling of subframe #6 in LTE_TDD_eIMTA (R1-141025; contact: CATT)	RAN1	R1-141025	noted	no	
R2-141049	Reply to LS to R2-134596 on mobility support for LC MTC UEs and MTC coverage enhancement (R1-141029; contact: Vodafone)	RAN1	R1-141029	noted	no	
R2-141050	LS on Identification of TBS/bandwidth limited UE by eNB (R1-141033; contact: Alcatel-Lucent)	RAN1	R1-141033	noted	no	
R2-141051	Reply LS to S2-140563 = R2-140811 on error handling in eMBMS (R3-140460; contact: NSN)	RAN3	R3-140460	noted	no	
R2-141052	Reply LS to R2-134503 on cell reselection indication during common E-DCH transmission (R3-140461; contact: Huawei)	RAN3	R3-140461	noted	no	
R2-141053	Reply LS to R2-134600 on Context Fetch for HetNet Mobility Enhancements (R3-140476; contact: Qualcomm)	RAN3	R3-140476	noted	no	
R2-141054	Reply LS to S2-140537 = R2-140808 on system aspects for Small Cell Enhancement work in RAN (R3-140486; contact: Huawei)	RAN3	R3-140486	noted	no	
R2-141055	LS on Text Proposal for TR 36.843 (R3-140490; contact: Qualcomm)	RAN3	R3-140490	noted	no	
R2-141056	LS on RAN4 agreements on 'Increasing the minimum requirements for number of carriers" (R4-140401; contact: Ericsson)	RAN4	R4-140401	noted	R2-141766	
R2-141057	LS on deployment scenario for Intra-band Non-contiguous CA (R4-140596; contact: NTTDOCOMO)	RAN4	R4-140596	noted	no	
R2-141058	Reply LS to R2-133683 on extending the size of the neighbour cell list (R4-141084; contact: Ericsson)	RAN4	R4-141084	noted	no	
R2-141059	LS on Release 10 (Rel-10) FGI bit handling for bit 31 (RP-140501; contact: KDDI)	RAN	RP-140501	noted	no	
R2-141060	LS on choice of scheduling period for MBMS (S2-140844; contact: Airbus)	SA2	S2-140844	noted	R2-141853	
R2-141061	LS on GCSE QCIs and connected mode DRX (S2-140846; contact: Vodafone)	SA2	S2-140846	noted	no	

RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-141062	LS on Provisioning of ProSe configuration information in a public safety ProSe enabled UE (S2-140847; contact: Deutshc Telekom)	SA2	S2-140847	noted	no	
R2-141063	LS on RAN1 TDD-FDD CA status and related RRC impact (R1-141065; contact: Nokia)	RAN1	R1-141065	noted	no	
R2-141064	LS on RRC parameters for LTE_TDD_eIMTA (R1-141066; contact: CATT)	RAN1	R1-141066	noted	no	
R2-141065	LS on the problem of UE Radio Capability information size (S2-141251; contact: NTT DOCOMO)	SA2	S2-141251	noted	no	
R2-141066	Reply LS to R2-133030 on Questions to RAN on UPCON (S2-141435; contact: Orange)	SA2	S2-141435	noted	no	
R2-141067	Reply LS to R2-141026 on CN impacts of RAN2 solutions for WLAN/3GPP radio interworking (S2-141506; contact: Alcatel-Lucent)	SA2	S2-141506, R2-141026	noted	no	
R2-141068	LS on eMBMS broadcast areas with EUTRAN Cell Granularity (S2-141508; contact: Vodafone)	SA2	S2-141508	noted	R2-141826	
R2-141070	LS on Enhanced BCH parameters (R1-141755; contact: Ericsson)	RAN1	R1-141755	noted	no	LS received on Wed of RAN2 #85bis
R2-141827	LS on the scheduling request transmission on the pSCell (R1-141869; contact: NSN)	RAN1	R1-141869	noted	no	LS received on Thu of RAN2 #85bis
R2-141830	LS on identifier in scheduling assignment for D2D communication (R1-141813; contact: Qualcomm)	RAN1	R1-141813	noted	no	LS received on Thu of RAN2 #85bis
R2-141831	Reply LS to R2-141005 on MMTEL and SMS prioritization (C1-141512; contact: Ericsson)	CT1	C1-141512	noted	no	LS received on Thu of RAN2 #85bis
R2-141833	Reply LS to S2-140846 = R2-141061 on GCSE QCIs and connected mode DRX (C1-141513; contact: NSN)	CT1	C1-141513	noted	no	LS received on Thu of RAN2 #85bis
R2-141837	LS on D2D resource allocation Modes 1&2 (R1-141818; contact: Ericsson)	RAN1	R1-141818	noted	no	LS received on Thu of RAN2 #85bis
R2-141840	LS on S1-U tunnel switch for DC (R3-140936; contact: Huawei)	RAN3	R3-140936	noted	no	LS received on Fri of RAN2 #85bis

RAN2 Tdoc	title (original Tdoc; contact)	source	original Tdoc	status	final LS answer	additional comments
R2-141841	Reply LS to R2-140934 on security aspects of protocol architectures for small cell enhancements (S3-140577; contact: Ericsson)	SA3	S3-140577	noted	R2-141844	LS received on Fri of RAN2 #85bis; 1 week email discussion to provide LS answer in R2-141844 (Ericsson)
R2-141845	Reply LS to R1-140941 = R2-141046 on parameter synchronization (S3-140566; Qualcomm)	SA3	S3-140566	noted	no	LS received on Fri of RAN2 #85bis

postponed: 0 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: 36 LSs received for RAN2 #85bis (5 on UTRA, 28 on LTE, 10 on joint aspects)
- 0 resubmissions from RAN2 #86
- All 36 incoming LSs were noted, 0 LSs were not treated and will be resubmitted to RAN2 #86.
- 9 of the 36 incoming LSs were received during the RAN2 #85bis meeting:
  - R2-141070 = R1-141755
  - R2-141827 = R1-141869
  - R2-141830 = R1-141813
  - R2-141831 = C1-141512
  - R2-141833 = C1-141513
  - R2-141837 = R1-141818
  - R2-141840 = R3-140936
  - R2-141841 = S3-140577
  - R2-141845 = S3-140566

- For 0 incoming LS an LS answer was postponed.

Annex D:
Outgoing liaison statements of TSG RAN WG2 #85bis

Only final outgoing LSs are listed here.

final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-141761	Reply LS on provisioning of E-UTRA capabilities in GERAN	GERAN2	CT1	Huawei	GP-140245 = R2-141043	REL-8	TEI8	LS was sent out on Wed evening of RAN2 #85bis
R2-141766	Reply LS on increased number of LTE frequencies to monitor in UMTS	RAN4	-	Ericsson	R4-140401 = R2-141056	REL-12	LTE_UTRA_IncMon-Core	LS was sent out on Wed evening of RAN2 #85bis
R2-141785	LS on RAN2 agreements and working assumptions on E-DCH decoupling	RAN1	RAN3	NSN	-	REL-12	UTRA_hetnet_enh-Core	
R2-141786	LS on DCH enhancements	RAN1	RAN3	Qualcomm	-	REL-12	UTRA_DCHenh-Core	
R2-141787	LS on TTI switching indication from UE	RAN1	-	Ericsson	-	REL-12	EDCH_enh-Core	
R2-141789	LS on TTI switching	RAN3	RAN1	Ericsson	-	REL-12	EDCH_enh-Core	
R2-141790	LS to CT1 on per CN domain timer	CT1	-	Huawei	-	REL-12	EDCH_Enh-Core	Result of 1 week email discussion [85bis#05][UMTS/FEUL]
R2-141825	LS on Resource allocation restriction and identification of low complexity MTC UEs	RAN1	-	Vodafone	-	REL-12	LC_MTC_LTE-Core	LS was sent out on Wed evening of RAN2 #85bis
R2-141826	Reply LS on eMBMS broadcast areas with EUTRAN Cell Granularity	SA2	CT3, CT4, RAN3, SA4	Vodafone	S2-141508 = R2-141068	REL-12	GCSE_LTE	
R2-141836	Reply LS to R1-141813 = R2-141830 on identifier in scheduling assignments for D2D communication	RAN1	-	Ericsson	R1-141813 = R2-141830	REL-12	LTE_D2D_Prox-Core	Result of 1 week email discussion [85bis#03][LTE/D2D]

final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
R2-141844	Reply LS S3-140577 = R2-141841 on security aspects of protocol architectures for small cell enhancements (to: SA3; cc: RAN3; contact: Ericsson)	SA3	RAN3	Ericsson	S3-140577 = R2-141841	REL-12	LTE_SC_enh_dualC-Core	Result of 1 week email discussion [85bis#00][LTE/DC]
R2-141848	Reply LS on prioritizing MCG uplink transmission	RAN1	-	Samsung	R1-141007 = R2-140958	REL-12	LTE_SC_enh_dualC-Core	
R2-141849	LS on SFN handling in the dual connectivity	RAN3, RAN4	RAN1	Samsung	-	REL-12	LTE_SC_enh_dualC-Core	
R2-141850	LS on reporting of successfully delivered PDCP PDUs	RAN3	-	Ericsson	-	REL-12	LTE_SC_enh_dualC-Core	
R2-141851	LS on Activation/deactivation for Dual Connectivity	RAN4	RAN1	NSN	-	REL-12	LTE_SC_enh_dualC-Core	
R2-141852	Reply LS on subframe #6 in LTE_TDD_eIMTA	RAN1	-	CATT	R1-141025 = R2-141048	REL-12	LTE_TDD_eIMTA-Core	
R2-141853	Reply LS on choice of scheduling period for MBMS	SA2	RAN3, RAN	Alcatel-Lucent	S2-140844 = R2-141060	REL-12	GCSE_LTE	
R2-141855	LS on WLAN signal measurements for WLAN/3GPP Radio interworking	IEEE 802.11 WG	WiFi Alliance, RAN4, RAN5, SA2, RAN	Ericsson	-	REL-12	UTRA_LTE_WLAN_interw-Core	

Summary:

In total 18 outgoing LSs of RAN2 #85bis (Including 3 outgoing LSs after one week email discussion):
5 on UTRA, 9 on LTE/E-UTRA and 4 on joint aspects.

Annex E:
List of in principle agreed CRs of RAN2 #85bis

In total 28 in principle agreed CRs of RAN2 #85bis (including 8 which are implicitly in principle agreed, marked in yellow, since their cat.F CRs were in principle agreed) will be resubmitted to RAN2 #86 (incl. cat.A: 6 CRs for UTRA 25.xxx specs, 2 CRs for LTE 36.xxx specs, 0 CRs for joint 37.xxx specs).

The following table includes already Tdoc and CR numbers allocated for RAN2 #86 for all in principle agreed CRs of RAN2 #85bis:

RAN2 #86 Tdoc	Title	Source	Spec	CR #	rev	cat	Release	SI/WI	RAN2 #85bis Tdoc
R2-141896	Correction of physical channel combinations with Multiflow operation	NSN, Qualcomm Incorporated	25.302	0222		F	REL-11	HSDPA_MFTX-Core, RANimp-DC_HSUPA	R2-141085
R2-141897	Correction to the handling of IE "E-DPDCH power interpolation" when absent"	Broadcom Corporation, Ericsson	25.331	5570		F	REL-7	TEI7, RANimp-16QamUplink	R2-141143
R2-141898	Correction to the handling of IE "E-DPDCH power interpolation" when absent"	Broadcom Corporation, Ericsson	25.331	5571		F	REL-11	TEI11, RANimp-16QamUplink	R2-141144
R2-141899	Introduction of the new Band combinations related to Band XXXII	Ericsson, , Qualcomm Incorporated	25.327	0006		B	REL-9	LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core, TEI9	R2-141146
R2-141900	Introduction of the new Band combinations related to Band XXXII	Ericsson, , Qualcomm Incorporated	25.327	0007		B	REL-10	LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core, 4C_HSDPA-Core, TEI10	R2-141147
R2-141901	Introduction of the new Band combinations related to Band XXXII	Ericsson, , Qualcomm Incorporated	25.327	0008		B	REL-11	LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core, 4C_HSDPA-Core, TEI11	R2-141148
R2-141902	Introduction of the new band combinations related to Band XXXII	Ericsson, , Qualcomm Incorporated	25.327	0009		B	REL-12	LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core, 4C_HSDPA-Core, TEI12	R2-141149
R2-141903	Introduction of the new Band combinations related to Band XXXII	Ericsson, , Qualcomm Incorporated	25.331	5572		B	REL-12	LTE_UTRA_SDL_BandL-Core, DB_DC_HSDPA-Core, 4C_HSDPA-Core, TEI12	R2-141151
R2-141904	Introduction of the Downlink Reception Types for TDD eIMTA	CATT	36.302	0050		B	REL-12	LTE_TDD_eIMTA-Core	R2-141190
R2-141905	Correction on using HS-DSCH CQI reporting tables for 4Tx-HSDPA	Huawei, HiSilicon	25.331	5573		F	REL-11	4Tx_HSDPA-Core	R2-141369
R2-141906	Clarification to absolute priority cell reselection in CELL_FACH	Ericsson, Intel Corporation	25.331	5574		F	REL-11	Cell_FACH_enh-Core	R2-141468
R2-141907	Clarification to absolute priority cell reselection in	Ericsson, Intel	25.331	5575		A	REL-12	Cell_FACH_enh-Core	R2-141471

RAN2 #86 Tdoc	Title	Source	Spec	CR #	rev	cat	Release	SI/WI	RAN2 #85bis Tdoc
	CELL_FACH	Corporation							
R2-141908	Removal of comment line from EUTRA-UE-Variables imports	Ericsson	36.331	1469		F	REL-10	LTE-L23, TEI10	R2-141591
R2-141909	Removal of comment line from EUTRA-UE-Variables imports	Ericsson	36.331	1470		A	REL-11	LTE-L23, TEI10	R2-141593
R2-141910	Removal of comment line from EUTRA-UE-Variables imports	Ericsson	36.331	1471		A	REL-12	LTE-L23, TEI10	R2-141594
R2-141911	Correction to E-UTRAN - 1.28Mcps TDD Handover	Ericsson, CATT	25.331	5576		F	REL-11	TEI11	R2-141595
R2-141912	Correction to E-UTRAN - 1.28Mcps TDD Handover	Ericsson, CATT	25.331	5577		A	REL-12	TEI11	R2-141596
R2-141913	Correction on measObjectList in VarMeasConfig	Huawei, HiSilicon	36.331	1472		F	REL-9	TEI9	R2-141767
R2-141914	Correction on measObjectList in VarMeasConfig	Huawei, HiSilicon	36.331	1473		A	REL-10	TEI9	R2-141768
R2-141915	Correction on measObjectList in VarMeasConfig	Huawei, HiSilicon	36.331	1474		A	REL-11	TEI9	R2-141769
R2-141916	Correction on measObjectList in VarMeasConfig	Huawei, HiSilicon	36.331	1475		A	REL-12	TEI9	R2-141770
R2-141917	Clarification on MAC-ehs configuration for inter-Node B Multiflow operation	Huawei, HiSilicon, NSN	25.331	5578		F	REL-11	HSDPA_MFTX-Core	R2-141801
R2-141918	Clarification of CID reuse	NTT DOCOMO, INC.	36.323	0112		F	REL-10	TEI10, LTE-L23	R2-141815
R2-141919	Update of CA deployment scenarios	NTT DOCOMO, INC., NSN	36.300	0615		F	REL-11	LTE_CA_enh-Core	R2-141816
R2-141920	Update of CA deployment scenarios	NTT DOCOMO, INC., NSN	36.300	0616		A	REL-12	LTE_CA_enh-Core	R2-141817
R2-141921	Clarificaton on precedence of SCell SI provided dedicately	Samsung	36.331	1476		F	REL-11	LTE_CA-Core, TEI11	R2-141818
R2-141922	Correction on simultaneous DL physical channels for idle UE	Samsung	36.302	0051		F	REL-12	TEI12	R2-141819
R2-141923	Minor correction inbound mobility to shared CSG cell	Samsung	36.331	1477		F	REL-12	EHNB_enh3-Core	R2-141839
R2-141924	Correction to the handling of IE "E-DPDCH power interpolation" when absent"	Broadcom Corporation, Ericsson	25.331	5579		A	REL-8	TEI7, RANimp-16QamUplink	R2-141143
R2-141925	Correction to the handling of IE "E-DPDCH power interpolation" when absent"	Broadcom Corporation, Ericsson	25.331	5580		A	REL-9	TEI7, RANimp-16QamUplink	R2-141143
R2-141926	Correction to the handling of IE "E-DPDCH power interpolation" when absent"	Broadcom Corporation, Ericsson	25.331	5581		A	REL-10	TEI7, RANimp-16QamUplink	R2-141143
R2-141927	Correction to the handling of IE "E-DPDCH power interpolation" when absent"	Broadcom Corporation, Ericsson	25.331	5582		A	REL-12	TEI11, RANimp-16QamUplink	R2-141144
R2-141928	Clarification on MAC-ehs configuration for inter-Node B Multiflow operation	Huawei, HiSilicon, NSN	25.331	5583		A	REL-12	HSDPA_MFTX-Core	R2-141801
R2-141929	Clarification of CID reuse	NTT DOCOMO, INC.	36.323	0113		A	REL-11	TEI10, LTE-L23	R2-141815
R2-141930	Clarificaton on precedence of SCell SI provided dedicately	Samsung	36.331	1478		A	REL-12	LTE_CA-Core, TEI11	R2-141818
R2-141931	Correction on using HS-DSCH CQI reporting tables for 4Tx-HSDPA	Huawei, HiSilicon	25.331	5584		A	REL-12	4Tx_HSDPA-Core	R2-141369

Annex F:
RAN WG2 meeting #85bis 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 10.04.2014 midnight Pacific time, i.e. Fri 11.04.2014 9am CET:

[85bis#00][LTE/DC] LS to SA3 (Ericsson)
- Attempt to answer the questions in LS R2-141841 from SA3

=> Intended outcome: Approved LS to SA3 in R2-141844

conclusion: Email discussion was kicked off by Riikka Susitaival (Ericsson) on 08.04.2014. Reply LS to SA3 on security aspects of protocol architectures for small cell enhancements was agreed in R2-141844 on 11.04.2014

[85bis#01][LTE/DC] Running stage-2 CR (DCM)
- Reflect agreements from this meeting in running CR

=> Intended outcome: Endorsed running 36.300 CR

conclusion: Email discussion was kicked off by toru Uchino (NTT DOCOMO) on 07.04.2014.
Running 36.300 CR on Introduction of Dual Connectivity was endorsed in R2-141857 on 14.04.2014.

* note: Since R2-141857 has error some existing texts removed it was corrected in following email discussion [85bis#14][LTE/DC] on merging RAN3 input to RAN2 stage-2 CRs (DCM)

[85bis#02][LTE/D2D] Running 36.300 CR (QC)
- Reflect agreements from this meeting in running CR
- Use CR in R2-141838 as baseline

=> Intended outcome: Endorsed running 36.300 CR

conclusion: Email discussion was kicked off by Sudhir Baghel (Qualcomm) on 07.04.2014.
Running 36.300 CR on Introduction of ProSe was endorsed in R2-141859 on 11.04.2014.

[85bis#03][LTE/D2D] Approval of LS on L1 ID (Ericsson)

=> Intended outcome: Approved LS to RAN1

conclusion: Email discussion was kicked off by Mats Folke (Ericsson) on 08.04.2014. Reply LS to RAN1 on identifier in scheduling assignments for D2D Communication was agreed in R2-141836 on 11.04.2014

[85bis#04][LTE/MTC-LC] Running stage-2 CR (Vodafone)
- Reflect agreements from this meeting in running CR
- Use R2-141462 as baseline

=> Intended outcome: Endorsed running 36.300 CR

conclusion: Email discussion was kicked off by Alexej Kulakov (Vodafone) on 07.04.2014.
Running 36.300 CR on Stage 2 aspects of low complexity MTC UE features was endorsed in R2-141858 on 11.04.2014.

[85bis#05][UMTS/FEUL] LS to CT1 on the per CN domain wait timer (Huawei)
- Scope: Agree on final LS to CT1

=> Intended outcome: Final LS to CT1 in R2-141790

conclusion: Email discussion was kicked off by Jun Chen (Huawei) on 07.04.2014.
LS to CT1 on per CN domain timer was agreed in R2-141790 on 11.04.2014

Email discussions with finalisation by Thu 08.05.2014 midnight Pacific time, i.e. Fri 09.05.14 9am CET:

[85bis#10][Joint/WiFi] Introduction of WiFi Interworking in 25.300 (Intel)
- Copy relevant aspects of the 36.300 CR
- Reflect additional agreements from UTRAN session

=> Intended outcome: Draft running 25.300 TP

conclusion: Email discussion was kicked off by Sasha Sirotkin (Intel) on 14.04.2014. TP for 25.300 on WLAN/3GPP radio interworking was provided to RAN2 #86 in R2-142135.

[85bis#11][Joint/WiFi] Introduction of WiFi Interworking in 36.304 (Intel)
- Reflect agreements from this week in running CR

=> Intended outcome: Draft running 36.304 CR

conclusion: Email discussion was kicked off by Sasha Sirotkin (Intel) on 14.04.2014. A 36.304 CR was provided to RAN2#86 in R2-142130.

[85bis#12][Joint/UEPCOP] Running stage-3 CRs (ZTE)
- Review 35.304 and 36.304 CRs in R2-141764 and R2-141765
- Check whether “stop timers” is clear and results in desired behaviour.
- Discuss whether the UE must not perform certain tasks when PSM is configured (e.g. TAU updates)

=> Intended outcome: Draft running 36.304 and 25.304 CRs

conclusion: Email discussion was kicked off by Sergio Parolari (ZTE) on 21.04.2014. Email discussion summary was provided to RAN2 #86 in R2-142350.

[85bis#13][LTE/CA] CA band combination capability signalling (Ericsson)
- Discuss requesting of subset of the band combination by eNB (see R2-141494)
- Discuss omitting UL band combinations for specific CA combinations (see R2-141172)
- Discuss the need to extend the number of band combinations
- Discuss from which release an enhancement should be introduced
- Discuss how to further progress with legacy signalling in the future
- Discuss how to maintain compatibility of legacy UEs/NWs.

=> Intended outcome: Email discussion report and CRs

conclusion: Email discussion was kicked off by Håkan Palm (Ericsson) on 14.04.2014. Email discussion summary was provided to RAN2 #86 in R2-142470. Also relevant 36.306 CRs in R2-142542, R2-142544 and 36.331 CRs in R2-142488, R2-142499, R2-142551, R2-142552 and R2-142553.were provided to RAN2 #86.

[85bis#14][LTE/DC] Merge RAN3 input to RAN2 stage-2 CRs (DCM)
- Merge endorsed RAN3 CR into running RAN2 CR
- Identify possible need for alignment.

=> Intended outcome: Draft running 36.300 CR

conclusion: Email discussion was kicked off by Toru Uchino (NTT DOCOMO) on 18.04.2014 and RAN3 inputs, R2-141860 and R2-141861 were provided by MCC on 14.04.2014. Email discussion summary was provided to RAN2 #86 in R2-142496. Also a 36.300 CR was provided to RAN2 #86 in R2-142676.

[85bis#15][LTE/DC] SCG RRM (Samsung)
- Discuss which assistance information to provide and for which SeNB cells to provide measurement results.

=> Intended outcome: Email discussion report

conclusion: Email discussion was kicked off by Himke Vandervelde (Samsung) on 09.05.2014. Email discussion summary was provided to RAN2 #86 in R2-142375.

[85bis#16][LTE/MBMS-MDT] eMBMS measurements for Logged MDT Stage-2 (MediaTek)
- Aim to provide 37.320 CR capturing the agreements made so far

=> Intended outcome: Draft running 37.320 CR

conclusion: Email discussion was kicked off by Johan Johansson (Mediatek) on 08.05.2014.

A 37.320 CR was provided to RAN2#86 in R2-142643.

[85bis#17][LTE/MBMS-MDT] eMBMS measurements for Logged MDT (QC)
- Progress stage-3 work according to agreements from this meeting
- Aim to provide 36.331 CR using R2-141536 as baseline

=> Intended outcome: Email discussion summary and a draft running 36.331 CR

conclusion: Email discussion was kicked off by Xipeng Zhu (Qualcomm) on 21.04.2014.
Email discussion summary was provided to RAN2 #86 in R2-142626.
Also, a 36.331 CR was provided to RAN2#86 in R2-142628.

[85bis#18][LTE/D2D] User plane aspects of D2D Communication (QC)

=> Intended outcome: Email discussion report

conclusion: Email discussion was kicked off by Sudhir Baghel (Qualcomm) on 18.04.2014.
Email discussion summary was provided to RAN2 #86 in R2-142561.

[85bis#19][LTE/D2D] Resource allocation details for D2D Communication (Ericsson)
- Further details based on the agreements made so far
- Progress e.g. the mode selection
- Take into account progress in RAN1.

=> Intended outcome: Email discussion report

conclusion: Email discussion was kicked off by Mats Folke (Ericsson) on 17.04.2014.
Email discussion summary was provided to RAN2 #86 in R2-142429.

[85bis#20][LTE/eIMTA] Introducing eIMTA in 36.331 (CATT)
- Review 36.331 CR in R2-141824

=> Intended outcome: Draft running 36.331 CR

conclusion: Email discussion was kicked off by Erlin Zeng (CATT) on 17.04.2014 and RAN1 input in R2-141881 was provided on 25.04.2014.
Email discussion summary was provided to RAN2 #86 in R2-142181.
Also a 36.331 CR was provided to RAN2#86 in R2-142182.

[85bis#21][LTE/eIMTA] SPS for eIMTA (Huawei)
- Focus on Support of two interval SPS with eIMTA
- Can discuss relation to RAN1 agreements/assumptions

=> Intended outcome: Email discussion report

conclusion: Email discussion was kicked off by Xiaodong Yang (Huawei) on 18.04.2014.
Email discussion summary was provided to RAN2 #86 in R2-142387.

[85bis#22][LTE/eIMTA] MAC aspects of eIMTA (CATT)
- Capture PDCCH monitoring behaviour and RACH procedure (if agreed) in MAC

=> Intended outcome: Email discussion report

conclusion: Email discussion was kicked off by Erlin Zeng (CATT) on 18.04.2014.
Email discussion summary was provided to RAN2 #86 in R2-142183.
Also a 36.321 CR was provided to RAN2#86 in R2-142184.

[85bis#23][UMTS/MFBI] CRs capturing MFBI agreements (Ericsson)
- Review draft CRs resolving MFBI issues:
- Rel-10 CRs capturing agreements from R2-141771
- Rel-11 CRs capturing agreements from RAN2#85

=> Intended outcome: Draft CRs for RAN2#86

conclusion: Email discussion was kicked off by Mark Curran (Ericsson) on 15.04.2014.
25.331 CRs were provided to RAN2#86 in R2-142140, R2-142142, R2-142143, R2-142144 and R2-142145.

[85bis#24][UMTS/Het-Net-Mob] New inter-frequency event (Huawei)
- 1st phase discuss open issues and agree on way forward for each open issue (end on April 30th)
- 2nd phase review the CRs capturing the agreements (end on May 8th)

=> Intended outcome: Draft CRs for RAN2#86

conclusion: Email discussion was kicked off by Jun Chen (Huawei) on 15.04.2014.
Email discussion summary was provided to RAN2 #86 in R2-142165.
Also a 25.306 CR was provided in R2-142166 and a 25.331 CR in R2-142167.

[85bis#25][UMTS/Het-Net-Mob] Enhanced Serving cell change (Huawei)

- 1st phase discuss 1 for key details on stage 3 aspects (end on April 30th)
- 2nd phase review the CRs capturing all agreements (end on May 8th)

=> Intended outcome: Draft CRs for RAN2#86

conclusion: Email discussion was kicked off by Xiaodong Yang (Huawei) on 11.04.2014. Draft CRs were provided in R2-142289 for TS 25.331, R2-142292 for TS 25.306 and R2-142299 for TS 25.308.

[85bis#26][UMTS/TEI12] Cell reselection indication (Huawei)

- Scope: review stage 3 CRs for the introduction of cell reselection indication

=> Intended outcome: Agreeable stage 3 CRs

conclusion: Email discussion was kicked off by Xiaodong Yang (Huawei) on 18.04.2014. Stage 3 CRs were provided to RAN2#86 in R2-142284 for TS 25.306, R2-142282 for RS 25.304, R2-142287 for TS 25.319, R2-142286 for TS 25.321 and R2-14xxxx for TS 25.331

Annex G:
LTE UP session

On Tuesday morning and on Wesday morning of RAN2 #85bis, in parallel to the main LTE session, an LTE User Plane session was held in room Recati B (E Floor) chaired by RAN2 vice-chairman SeungJune Yi (LG) addressing:

On Tuesday:
6.1.2 LTE: REL-10 and earlier REL WIs: User Plane
6.2.2 LTE: REL-11 WIs: User Plane
7.6.3 LTE: REL-12: WI TDD Interference Management and Traffic Adaptation (eIMTA): Stage-3 UP
7.10.2 LTE: TEI12 UP

On Wesday:
7.1.4 LTE: REL-12: WI Dual Connectivity for LTE (SCE): UP Details

The corresponding report of this session R2-141800 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-11 and earlier releases

6.1 LTE Rel-10 and earlier release WIs

6.1.2 User Plane

The documents in this AI will be treated in the UP session.

ACK_SN setting for partial Status PDU

R2-141662 RLC ACK_SN Ambiguity with partial status PDU; Qualcomm Incorporated, Broadcom Corporation; Disc; 36.322; REL-8; LTE-23;
=> Option A is correct, i.e. setting ACK_SN equal to the NACK_SN of the missing segments that could not be included in the partial STATUS PDU.

R2-141323 RLC ACK_SN for Partial STATUS PDU; LG Electronics Inc.; Disc; REL-10; LTE-L23, TEI10;
- QC think we should not leave the RLC transmitter interpretation unambiguous. Samsung think we don't need to change anything, as the UE side transmission is not impacted. NSN also think the spec is clear. Huawei, MediaTek wants to clarify the interpretation part.

=> ACK_SN setting behavior is clear.
=> For interpretation of partial status PDU, no change is needed.

R2-141176 Partial Status PDU Handling; NSN, Nokia Corporation; Disc; REL-8; TEI8;
R2-141613 ACK_SN for partial STATUS PDU; Huawei, HiSilicon; Disc; REL-11; TEI11;
[Moved from 6.2.2 to 6.1.2]

=> All documents are not treated as already covered by discussion in R2-141323.

R2-141665 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; F; REL-8; LTE-L23;
F REL-8LTE-L23
R2-141621 Avoiding unnecessary retransmissions of AMD PDU segments; Huawei, HiSilicon; CR; 36.322; F; REL-11; TEI11;
[Moved from 6.2.2 to 6.1.2]

=> All CRs are not agreed.

Withdrawn

R2-141667 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; A; REL-9; LTE-L23;
R2-141668 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; A; REL-10; LTE-L23;
R2-141670 Clarification of RLC ACK_SN Ambiguity with Partial Status PDU; Qualcomm Incorporated, Broadcom Corporation; CR; 36.322; A; REL-11; LTE-L23;
=> All CRs are withdrawn.

6.2 LTE Rel-11 WIs

6.2.2 User Plane

The documents in this AI will be treated in the UP session.

R2-141707 ROHC CID reuse; NTT DOCOMO, INC.; Disc; Re-submission of R2-140538; REL-10; TEI10;
- Ericsson think it is UE implementation, i.e. reuse existing CID. DCM think the UE cannot know whether the new stream belongs to existing CID or not. Intel think the UE has to know whether the new stream belongs to existing one or not. DCM observed bad UE implementation during IOT that the UE discards the packet. QC think this problem is not the scope of RAN2. MediaTek think sensible UE would reuse existing CID, but ok to add in the PDCP specification so that the UE does not discard the packet. NSN support to add the note in PDCP. LG think the UE will either reuse the existing CID or send uncompressed, and discarding packet is bad implementation. Huawei wonders why the eNB allocate large CID values. DCM think currently the UE is allowed to support only up to 2 CID values. Samsung think we should avoid bad UE implementation, and ok to clarify in the spec. Intel is ok to add a note to avoid bad UE implementation.

=> Add a note in PDCP specification to avoid UE discarding packet.

R2-141708 Clarification of CID reuse; NTT DOCOMO, INC.; CR; 36.323; F; related to R2-141707; REL-10; TEI10, LTE-L23;
=> **[CBF]** Work offline to add a note in PDCP specification from Rel-10 (R2-141801, CR 36.323, NTT DCM)

R2-141735 Clarification of CID reuse; NTT DOCOMO, INC.; CR; 36.323; A; related to R2-141707; REL-12; TEI10, LTE-L23;
R2-141734 Clarification of CID reuse; NTT DOCOMO, INC.; CR; 36.323; A; related to R2-141707; REL-11; TEI-10, LTE-L23;
=> Withdrawn as they are real Cat A CRs.

7.1 WI: Dual Connectivity for LTE (SCE)

(LTE_SC_enh_dualC-Core, leading WG: RAN2, REL-12, started: Dec.13, target: Jun.14, WID: RP-132069)
TR of corresponding SI: 36.842
Time Budget: 3 TU in RAN2-85bis (+ ~2 TU in UP session)

7.1.4 User Plane Details

Documents in this agenda item are planned to be treated in the UP session.

Further details of BSR, LCP, activation/deactivation, Random access and DRX, PHR?

SPS and TTI bundling
Is SPS supported in SeNB?
Is TTI bundling supported in dual connectivity?
R2-141684 SPS and TTI bundling for dual connectivity; Qualcomm Incorporated; Disc;
=> Noted
R2-141180 SPS and TTI Bundling for Dual Connectivity; NSN, Nokia Corporation; Disc;

=> Noted

Joint discussion of R2-141684 and R2-141180:

SPS
- QC, Ericsson, think there is no complexity in UE point of view. We should not preclude the SPS feature. Samsung think there is no motivation to support SPS, but if there is no additional complexity, it is ok to support. ALU think there is no motivation to support. Broadcom does not support SPS. Ericsson, Huawei think the two MAC is quite independent. Intel think monitoring C-RNTI, and power consumption make the SPS support complex. Nokia think there is added complexity in UE implementation and test case. Samsung think test case can be designed per MAC. CMCC wants to support SPS in SCG. CATT think if Macro layer is SCG, then SPS in SCG is needed. Ericsson think not supporting SPS needs more specification work.

Show of hands
- Support SPS in SCG [10]
- Do not support SPS in SCG [9]

=> No consensus
- NSN, Samsung, DCM think if there is no consensus, we should not support SPS. DCM think SPS is nice to have feature. DCM think there was similar discussion in CA Rel-10. Fujitsu think the purpose of DC is not for VoIP.

TTI bundling
- Samsung expects there is no consensus similar to SPS. Nokia think TTI bundling is more complex than SPS, e.g. power sharing. Ericsson think TTI bundling is per MAC entity, and does not see additional complexity. Samsung think power sharing is network implementation issue. QC think there is use case for TTI bundling. For example, if VoIP is served by MeNB, the UE may need to perform TTI bundling to MeNB. NEC think there is no motivation to support TTI bundling to MCG and SCG simultaneously.

=> There is no strong motivation to support TTI bundling to SCG.

Show of hands
- Support TTI bundling to MCG even if DC is configured as long as there is no UL CA configured in MCG [13]
- Do not support TTI bundling to MCG if DC is configured [6]

=> If DC is configured, TTI bundling to MCG is supported as long as there is no UL CA configured in MCG.

R2-141339 Supporting TTI bundling in dual connectivity; LG Electronics Inc.; Disc;
R2-141504 SPS in split mode; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141108 SPS support in SeNB; CMCC; Disc;
R2-141156 SPS in dual connectivity; Huawei, HiSilicon; Disc;
R2-141207 SPS and TTI bundling support in dual connectivity; Intel Corporation; Disc;
R2-141337 Supporting SPS in SCG SCells; LG Electronics Inc.; Disc;
R2-141395 SPS and TTI bundling in dual connectivity; Samsung; Disc;
[Moved from 7.1.2 to 7.1.4]

=> All documents are not treated as covered by discussion in R2-141684 and R2-141180.

Time alignment

R2-141162 Time alignment for Dual Connectivity; Ericsson; Disc;
Proposal 1.
- MediaTek think TAG should be four for each CG. NTT DCM wants to support up to 5 TAG. Ericsson think having 5 TAG would change the MAC CE format. NTT DCM think the complexity to support 5 TAG is limited to MAC. NEC think that if the TAG ID is configured per CG, then we have to support four TAG per CG. LG think in CA Rel-11, companies

think that 2 TAG is enough. NSN think 4 is enough, and wonders why we need more than one TAG for SCG given that SCG is a small cell. Ericsson think it is possible to have multiple frequencies in SCG. NEC, Ericsson think supporting four per CG is simple from MAC specification point of view.

Proposal 4.

- Samsung think separate pool of TAG ID is aligned with our principle. MediaTek, NEC supports.

Proposal 7.

- Panasonic think there may be impact if PTAT expires. The RLC status report to MCG may be stuck in this case. NSN, NTT DCM think that the PTAT is maintained by MeNB.

Agreements

1	The total number of TA groups supported for Dual Connectivity is four per MAC.
3	All cells in one TA group are associated with one cell group.
4	Separate pools of TAG identities should be supported for MCG and SCG.
5	The TAG containing the special SCell should have TAG Identity zero.
6	Expiry of the SCG spTAG TAT triggers the same actions as expiry of the MCG pTAG TAT.
6-1	Expiry of the SCG sTAG TAT triggers the same actions as expiry of the MCG sTAG TAT.
7	Expiry of time alignment timers associated with one CG should not affect the operation of the other CG.

R2-141120 UL Time Alignment for Dual Connectivity; MediaTek Inc.; Disc;
R2-141340 TAG management for dual connectivity; LG Electronics Inc.; Disc;
R2-141712 Framework for TAG in Dual Connectivity; NTT DOCOMO, INC.; Disc;
[Moved from 7.1.2 to 7.1.4]

=> All documents are not treated as covered by discussion in R2-141162.

Activation/Deactivation

How to handle sCellDeactivationTimer for SCG cells?
What is the Act/Deact MAC CE format?

R2-141161 Handling of cell Activation/Deactivation in Dual connectivity; Ericsson; Disc;

sCellIndex

- ITL think it should be separate per MAC similar to TAG. Ericsson, LG think considering the PHR format, sCellIndex per UE is more simple. Samsung, Huawei think there is impact on measurement report, and having sCellIndex per UE is much simpler from RRC point of view. NEC think there are impacts on coordination between MCG and SCG.

=> sCellIndex is configured per UE.

Proposal 1

=> The UE shall not apply an sCellDeactivationTimer for the special SCell.

Proposal 2

- NSN think the value is per eNB, but the timer should be configured per cell. NTT DCM wants to configure sCellDeactivationTimer value per cell because each cell has different radio condition and different traffic characteristic. ZTE, LG, MediaTek think the timer value per cell is a kind of enhancement in CA.

=> The UE should maintain one sCellDeactivationTimer value per eNB.

Proposal 3

- ZTE think the MAC entity is not aware of the cells belong to other MAC entity.

=> The MAC entity should apply Ci-fields for the associated cells in Activation/Deactivation MAC CE.

Proposal 4
- AsusTek think the UE does not have to do anything special if we agree on Proposal 3.

R2-141181 SCG Cell scheduling and activation; NSN, Nokia Corporation; Disc;
- Panasonic asks whether the glitch issue impacts PCell of MCG when SCell of MCG is activated. ZTE think the glitch occurs also in cell of SCG if MCG SCell is activated. ZTE ask what is the glitch impact on MAC specification. NSN replied that there may be some more TTIs for interruption. LG wants to ask RAN4 about PCell interruption when SCG SCell is activated. Huawei asks the scope of the LS. MediaTek think the other eNB does not know the activation/deactivation status of the other cell, and the glitch issue in DC may not be the scope of RAN4. IDT think there may some X2 signaling between MeNB and SeNB. NSN wants to ask whether any new requirement is needed in DC.

=> Cross scheduling between MCG and SCG is not supported for Dual Connectivity

R2-141182 [DRAFT] LS on Activation/deactivation for Dual Connectivity; NSN; LSout;
- Pantech wonders whether the intra-band singlie RF is our assumption. NSN think it more on RAN4 issue. NTT DCM think there was no clear decision on whether we exclude intra-band case. IDT wonders if there is any change from UE perspective.
- Samsung wants to add the separate DRX configuration. Samsung wants to add all the RAN4 related issues in the LS. Nokia wants to include SFN synchronization issue. Panasonic think RAN1 already sent LS to RAN4 on SFN synchronization.

=> Remove second and third paragraphs.
=> Reformulate the ACTION.
=> **[CBF]** Revised in: LS to RAN4 (CC RAN1) on Activation/Deactivation (R2-141803, NSN)

R2-141338 Remaining issues on Activation/Deactivation for Dual connectivity; ITL Inc.; Disc;
R2-141466 The format of Activation MAC Control Element for Dual Connectivity; ASUSTeK; Disc;
R2-141487 Activation and deactivation for dual connectivity; Samsung; Disc;
R2-141565 Activation and deactivation handling for SCG cells; Sharp; Disc;

=> All documents are not treated as covered by discussion in R2-141161.

PHR

When a PHR triggering event occurs in one MAC entity, is PHR triggered in the corresponding MAC entity or both MAC entities?
For the PH information of other CG, which one should be included between real PH and virtual PH?
Which format shall be used for PHR?
- *Option 1. One PHR MAC CE including PHs for all cells of the UE*
- *Option 2. Two PHR MAC CEs each including PHs for all cells of the CG*

R2-141478 Power headroom report for dual connectivity; Samsung; Disc;

PHR triggering
- ZTE ask what is the complexity of combination 1. Samsung think differentiation of trigger will make the specification complex. ZTE think we already agreed that timer values are configured per MAC entity, and support combination 1. Huawei think the combination 1 has the least impact on specification and provides flexibility. LG prefers combination 3, because the PHR includes PH information of all serving cells. ZTE think pathloss and P-MPR change is useful information to other eNB. IDT wants to keep the PHR operation similar to what we have today, i.e. the scheduler should know the power situation of all cells. IDT think combination 3 will reduce the performance. LG think even in combination 3, the PHR to other eNB will eventually trigger. LG think the problem in combination 1 is that the PHR triggered by one eNB will delay the transmission of PHR triggered in the other eNB. IDT think the problem of combination 3 is that the other eNB is not informed of pathloss change of the cell belong to the other eNB. LG think if pathloss change occurs in one cell, it will impact the power situation of the other eNB, and the PHR will be triggered in the other eNB. NSN, Panasonic wants to trigger PHR for both MAC entities except periodic trigger. Panasonic think the important trigger is pathloss change, P-MPR change, and SCell activation. Ericsson wants to configure double triggering. IDT wonders why we need PHR trigger configurable.

=> Pathloss change, P-MPR change, and SCell activation triggers PHR for both MAC entities.

=> Periodic, and Reconfiguration triggers PHR to corresponding MAC entity.
=> PHR prohibit timer is started when a MAC entity sends PHR.

- NTT DCM wonders whether PHR is triggered when the special SCell is added. NSN think special cell configuration and activation should trigger PHR.

PHR format
- Ericsson prefers a new MAC CE format. ZTE think if we use double PHR scheme, then nothing need to be changed. MediaTek think the content is same for both format, and we should go for more efficient one. LG think we can reuse current format except including Type 2 PH for PSCell. Huawei think double PHR scheme need further MAC changes.
- Fujitsu asked whether we need a new LCID for the new format. Samsung think we should use a new LCID. ITL think we don't need a new LCID, as the configuration of DC can be known by RRC. Huawei, ZTE think using a new LCID is clear.

=> One PHR MAC CE format is used for DC.
=> As a working assumption, new LCID is allocated for PHR MAC CE for DC.

Real PH vs Virtual PH
- IDT think more important thing to scheduler is how many power is available rather than deltaTF and pathloss, so want to include Real PH. Panasonic clarified that this issue is discussed in RAN1, and leave it up to RAN1.

=> Whether to include Real PH or Virtual PH for cells belong to other eNB is left up to RAN1 decision.

R2-141155 PHR Operation in Dual Connectivity; Huawei, HiSilicon; Disc;
R2-141179 PHR for dual connectivity; NSN, Nokia Corporation; Disc;
R2-141199 Discussion on PHR triggering for Dual Connectivity; KDDI Corporation; Disc;
R2-141206 PHR for Dual Connectivity; Intel Corporation; Disc;
R2-141238 Disscussion on PHR of small cell; ZTE; Disc;
R2-141351 Dual Connectivity Power Headroom Reporting; InterDigital Communications; Disc;
R2-141422 PHR trigger with dual connectivity; LG Electronics Inc.; Disc;
R2-141510 PHR enhancement to support Dual Connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141554 Power headroom report for Dual Connectivity; Ericsson; Disc;
=> All documents are not treated as covered by discussion in R2-141478.

Power Management

Does CG specific maximum power need to be configured?

R2-141260 Uplink transmission power management and PHR reporting for dual connectivity; Panasonic; Disc;
R2-141682 UE maximum power and power headroom considerations in dual connectivity; Qualcomm Incorporated; Disc;
R2-141385 Issue on preventing power scaling down; Pantech; Disc;
=> All documents are not treated due to lack of time.

RA procedure

Is CBRA allowed only on Special SCell?
- Is only CFRA allowed for SCG SCell other than Special SCell?
Is RAR for SCG SCell received only on Special SCell?

R2-141119 Discussion on RACH issue on SeNB; ZTE; Disc;
R2-141157 Remaining issues of random access in dual connectivity; Huawei, HiSilicon; Disc;
R2-141401 Discussion on SCG random access; Samsung; Disc;
R2-141509 Discussion on message 3 content for contention-based RACH on SeNB; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;

=> All documents are not treated due to lack of time.

DRX

Is DRX coordination left for eNB implementation or specified in the specification?
If the DRX coordination is specified:
- *What is the signaling procedure of DRX coordination?*
- *What is the level of coordination?*

R2-141205 DRX alignment for dual connected UEs; Intel Corporation; Disc;
R2-141160 DRX configuration alignment; Ericsson; Disc;
R2-141485 DRX Configuration & Alignment in Dual Connectivity; Samsung Electronics; Disc;
R2-141552 DRX interaction between MeNB and SeNB; CATT; Disc;
R2-141562 DRX coordination in Dual Connectivity; NEC; Disc;
R2-141632 DRX coordination for dual connectivity; Nokia Corporation, NSN; Disc;
R2-141687 DRX for dual connectivity; Qualcomm Incorporated; Disc;
=> All documents are not treated due to lack of time.

BSR

R2-141153 BSR generation procedure for UL bearer split; Huawei, HiSilicon; Disc;
R2-141122 Scheduling Request for Small Packet; MediaTek Inc.; Disc;
R2-141424 BSR trigger with uplink bearer split; LG Electronics Inc.; Disc;
R2-141553 BSR procedures for split bearers; Ericsson; Disc;
R2-141615 Consideration of BSR and SR for Dual Connectivity; Fujitsu; Disc;
R2-141406 Scheduling Request in Dual Connectivity; Samsung; Disc;
R2-141204 BSR Transmission for Dual Connected UEs; Intel Corporation; Disc;
R2-141346 BSR for Bearer Split; ITRI; Disc;
R2-141563 Remaining issue of BSR reporting; CATT; Disc;
=> All documents are not treated due to lack of time.

LCP

R2-141505 Discussion on LCP for dual connectivity; Alcatel-Lucent, Alcatel-Lucent Shanghai Bell; Disc;
R2-141154 Enhancement of LCP procedure for dual connectivity; Huawei, HiSilicon; Disc;
R2-141208 Logical channel prioritization in dual connectivity; Intel Corporation; Disc;
R2-141403 Discussion on PBR handling for 3C bearer; Samsung; Disc;
R2-141482 Logical channel prioritization; Samsung; Disc;
R2-141556 LCP procedure for dual connectivity; CATT; Disc;
R2-141680 Logical channel prioritization for dual connectivity; Qualcomm Incorporated; Disc;
R2-141117 Discussion on UP issues related to uplink split; ZTE; Disc;
=> All documents are not treated due to lack of time.

MAC General

R2-141547 Modelling of MAC for dual connectivity; Ericsson; Disc;
R2-141550 Introduction of dual connectivity in MAC; Ericsson; CR; 36.321; B;
R2-141402 How to capture DC in the MAC specification; Samsung; Disc;
R2-141404 Discussion on MAC functions in dual MAC; Samsung; Disc;
R2-141405 Discussion on mapping between logical channel and transport channel in dual MAC; Samsung; Disc;
=> All documents are not treated due to lack of time.

Withdrawn

R2-141237 Disscussion on PHR of small cell; ZTE; Disc;
=> Withdrawn

R2-141408 Discussion on PBR handling for 3C bearer; Samsung; Disc;
[Late]

=> Withdrawn

7.6 WI: TDD Interference Management and Traffic Adaptation (eIMTA)

(LTE_TDD_eIMTA-Core, leading WG: RAN1, REL-12, started: Dec 12, target: Jun.14, WID: RP-121772)
Time Budget: 0,5 TU in RAN2-85bis (+0,5 TU in RAN2 UP session)

7.6.3 Stage-3 User Plane

Documents in this agenda item are planned to be treated in the UP session.

Is SPS supported in combination with eIMTA. Any additional impact? Need for changes?

SPS

Is SPS supported with eIMTA?
On which subframe the SPS data should be transmitted?
On which subframe the SPS command should be transmitted?
Is two-interval SPS supported with eIMTA?

R2-141186 SPS for TDD eIMTA; CATT; Disc;

- NSN does not want to support SPS together with eIMTA if we have to change MAC specification. NSN can support SPS together with eIMTA only if there is no change. LG, Samsung think eIMTA is usually configured when there is small number of UEs, and the gain of SPS is marginal. ZTE think it is strange to disable already existing feature. ZTE think the eIMTA can be also used in hot spot area. Ericsson think we can support SPS if it is transmitted on fixed subframe. Huawei think RAN1 already discussed eIMTA with SPS, so it is too late to remove SPS from eIMTA. Nokia think network implementation can ensure SPS is transmitted on fixed subframe.

=> Support of simultaneous SPS and eIMTA configuration relies on network implementation.

- ZTE think we don't need to change anything in MAC specification. CATT think it is useful to capture something in the meeting notes, as we did on RACH issue. Samsung think we need to specify that UE is not required to support all cases (i.e. the UE is not required to follow SPS command received in dynamic subframe). Ericsson think as long as RAN5 does not define any test case, there should be no problem Samsung think RAN5 does not make every test case. MediaTek think we may either specify UE is not required to support all cases or the network is not allowed to send SPS in dynamic subframes. Samsung think support both eIMTA and SPS bring quite some complexities, and we should evaluate the need for supporting both.

=> Offline discussion: how to capture support of both eIMTA and SPS (Samsung).

Summary of the offline discussion

=> Add a NOTE in SPS section: The eIMTA configured UE is not required to support configured grant or configured assignment in subframes which can be dynamically reconfigured. The eIMTA configured UE behavior is unspecified in such cases.

=> **[CBF]** Capture SPS in MAC (R2-141802, CR 36.321, Samsung)

- ZTE, QC don't want to exclude subframe #6 for SPS.

Two interval SPS

- Huawei think we can specify in MAC that the subframes for two interval SPS is based SIB1 TDD UL/DL configuration.
- ZTE wonders why don't we support two interval SPS. CATT think supporting two interval SPS brings much complexities. ZTE think three cases are possible, and it can be left up to

network implementation. Huawei think we need RRC change. Intel, QC want to revisit the two interval SPS next meeting.
=> **[EMAILDISC]** Support of two interval SPS with eIMTA (Huawei).

R2-141590 SPS Issues for eIMTA; Huawei, HiSilicon; Disc;
R2-141114 Discussion on the SPS operation in eIMTA; ZTE; Disc;
R2-141229 Discussion on SPS configuration for TDD eIMTA; Intel Corporation; Disc;
=> All documents are not treated as covered by discussion in R2-141186.

R2-141589 SPS for eIMTA; Huawei, HiSilicon; CR; 36.321; B;
=> The CR is not agreed.

36.321 CR

MAC CR implementation options for DRX
- Option 1. Change DRX timer counting for eIMTA UE
- Option 2. Change PDCCH monitoring for eIMTA UE
Is further clarification needed for RA procedure?

R2-141187 TDD eIMTA Impacts on MAC Specification; CATT; Disc;
[Moved from 7.6.1 to 7.6.3]

- NSN think we need to see TDD-FDD CA CR as well, and figure out why way is the best to specify. Ericsson think TDD-FDD CA can be captured in PDCCH subframe definition.
- LG think the difference between legacy UE and the eIMTA UE is PDCCH monitoring, so it is natural to change PDCCH monitoring, and prefer option 2. ZTE think it is a modeling issue, and wants to go for minimum change, i.e. option 1. Ericsson, Samsung, MediaTek prefer LG CR.

=> Specify eIMTA with change of PDCCH monitoring behavior.
=> Change the PDCCH monitoring behavior in Section 5.7.
=> Change the PDCCH subframe definition that the eIMTA configured UE follows SIB1 configuration.
=> Need for change RACH procedure
=> **[EMAILDISC]** Capture PDCCH monitoring behavior and RACH procedure (if agreed) in MAC. (CATT)

R2-141427 Capturing eIMTA in MAC specification; LG Electronics Inc.; Disc;
=> The document is not treated as covered by discussion in R2-141187.

CRs

R2-141430 draft CR to 36.321 on eIMTA operation; LG Electronics Inc.; CR; 36.321; B;
- ZTE, Samsung, Ericsson, CATT think we have to specify in PDCCH subframe definition that the eIMTA configured UE follows SIB1 configuration for PDCCH subframe.
- ZTE think that Annex C has to be changed if we change PDCCH subframe definition. LG think the Annex C is just for informative, and we don't need to change Annex C.

=> Postponed. The CR will be discussed in e-mail for the next meeting.

R2-141189 Introduction of TDD eITMA - Alt2; CATT; CR; 36.321; B; related to R2-141186;
[Moved from 7.6.1 to 7.6.3]

- Samsung, Huawei think that the CR does not capture the CA and eIMTA together.

RACH change
- Huawei, MediaTek think the first change is agreeable, but second change is not needed.
- NSN, MediaTek, NEC want to discuss RACH change in e-mail.

=> Postponed. The CR will be discussed in e-mail for the next meeting.

R2-141188 Introduction of TDD eITMA - Alt1; CATT; CR; 36.321; B; related to R2-141186;
[Moved from 7.6.1 to 7.6.3]

R2-141581 DRX for eIMTA (option 1); Huawei, HiSilicon; CR; 36.321; B;
R2-141585 DRX for eIMTA (option 2); Huawei, HiSilicon; CR; 36.321; B;
R2-141629 Specifying dynamic TDD operation in 36.321; Samsung; CR; 36.321; B;
R2-141588 RACH and eIMTA-RNTI for eIMTA; Huawei, HiSilicon; CR; 36.321; B;
=> All CRs are not agreed.

36.302 CR

R2-141190 Introduction of the Downlink Reception Types for TDD eIMTA; CATT; CR; 36.302; B;
[Moved from 7.6.1 to 7.6.3]

=> Agreed in principle.

Withdrawn

R2-141185 SPS for TDD eIMTA; CATT; Disc;
=> Withdrawn.

7.10 LTE TEI12

Small Technical Enhancements affecting LTE Rel-12 that do not belong to any Rel-12 WI.
Note: A TEI proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

7.10.2 LTE TEI12 UP

The documents in this AI will be treated in the UP session.

RLC LI Extension

R2-141315 Extended RLC LI field to support Jumbo Frames; Ericsson; Disc; REL-12; TEI12;
- ZTE think observation 3 is not correct, i.e. current UE behavior already allows transmission of multiple new RLC PDUs. Huawei wants to clarify it in the specification. ZTE think current spec is clear, and don't want to clarify.
- ZTE, NSN support extended LI.

=> Support extended LI from Rel-12.
- Samsung ask why the extended LI is 13 bits. Ericsson think 13 bits is minimum. Samsung think if we agree to extend LI, it is better to go for future proof way.

=> Extended LI has 15 bits.
- Huawei want to have in-band signaling for extended LI. Ericsson think such configuration is usually done by RRC. Ericsson also concerns about increasing signaling overhead by including indicator byte. Huawei think in-band signaling is more flexible.

=> Use of extend LI is signalled by RRC.

R2-141316 Extended RLC LI field; Ericsson; CR; 36.306; B; REL-12; TEI12;
R2-141317 Extended RLC LI field; Ericsson; CR; 36.322; B; REL-12; TEI12;
R2-141318 Extended RLC LI field; Ericsson; CR; 36.331; B; REL-12; TEI12;
=> All CRs are postponed to the next meeting.

R2-141623 RLC limitation in jumbo subframe case; Huawei, HiSilicon; Disc; REL-12; TEI12;
=> The document is not treated as covered by discussion in R2-141315.

R2-141626 Clarification on the multiplxing RLC PDUs in one MAC PDU; Huawei, HiSilicon; CR; 36.322; F; REL-12; TEI12;
=> The CR is not agreed.

Initial TA value

R2-141746 Initialization of TA values; Ericsson; Disc; REL-12; TEI12;

- Ericsson think in Rel-11 this issue was not fully discussed due to time limit. Samsung, NSN think UL power control is one reason that the UE shall perform RA at new TAG establishment.

=> No support.

Summary of the UP ad hoc meeting

In-principle agreed CRs
R2-141190 Introduction of the Downlink Reception Types for TDD eIMTA; CATT; CR; 36.302; B;

Agreed outgoing LS
None

Comeback on Friday
=> Work offline to add a note in PDCP specification for ROHC from Rel-10 (R2-141801, CR 36.323, NTT DCM)
=> Capture SPS with eIMTA in MAC (R2-141802, CR 36.321, Samsung)
=> LS to RAN4 (CC RAN1) on Activation/Deactivation with Dual Connectivity (R2-141803, NSN)

E-mail discussion for the next meeting
=> Support of two interval SPS with eIMTA (Huawei).
=> Capture PDCCH monitoring behavior and RACH procedure (if agreed) in MAC. (CATT)

Comeback at the next meeting
None

Agreements on Rel-12 WIs

Dual Connectivity
TTI bundling
=> There is no strong motivation to support TTI bundling to SCG.
=> If DC is configured, TTI bundling to MCG is supported as long as there is no UL CA configured in MCG.
Time Alignment
=> The total number of TA groups supported for Dual Connectivity is four per MAC.
=> All cells in one TA group are associated with one cell group.
=> Separate pools of TAG identities should be supported for MCG and SCG.
=> The TAG containing the special SCell should have TAG Identity zero.
=> Expiry of the SCG spTAG TAT triggers the same actions as expiry of the MCG pTAG TAT.
=> Expiry of the SCG sTAG TAT triggers the same actions as expiry of the MCG sTAG TAT.
=> Expiry of time alignment timers associated with one CG should not affect the operation of the other CG.
sCellIndex
=> sCellIndex is configured per UE.
Activation/Deactivation
=> The UE shall not apply an sCellDeactivationTimer for the special SCell.
=> The UE should maintain one sCellDeactivationTimer value per eNB.
=> The MAC entity should apply Ci-fields for the associated cells in Activation/Deactivation MAC CE.
Cross scheduling
=> Cross scheduling between MCG and SCG is not supported for Dual Connectivity
PHR
=> Pathloss change, P-MPR change, and SCell activation triggers PHR for both MAC entities.
=> Periodic, and Reconfiguration triggers PHR to corresponding MAC entity.
=> PHR prohibit timer is started when a MAC entity sends PHR.
=> One PHR MAC CE format is used for DC.
=> As a working assumption, new LCID is allocated for PHR MAC CE for DC.
=> Whether to include Real PH or Virtual PH for cells belong to other eNB is left up to RAN1 decision.

eIMTA
=> Support of simultaneous SPS and eIMTA configuration relies on network implementation.
=> Specify eIMTA with change of PDCCH monitoring behavior.
=> Change the PDCCH monitoring behavior in Section 5.7.

=> Change the PDCCH subframe definition that the eIMTA configured UE follows SIB1 configuration.

Annex H:
History

Document history		
Date	**TSG RAN WG2 Tdoc**	**Subject**
24.03.2014	-	Skeleton report for RAN WG2 #85bis provided before the meeting
27.03.2014	-	Updated skeleton report for RAN WG2 #85bis provided before the meeting
28.03.2014	-	Update 2 of skeleton report for RAN WG2 #85bis provided before the meeting
31.03.2014	-	Update 3 of skeleton report for RAN WG2 #85bis provided before the meeting
07.04.2014	-	Draft report v0.1 of RAN WG2 #85bis provided after RAN WG2 #85bis
12.05.2014	R2-141871	Draft report v1.0 of RAN WG2 #85bis provided after RAN WG2 #85bis (revision marks compared to v0.1)
23.05.2014	R2-142801	Draft report v2.0 of RAN WG2 #85bis provided during RAN WG2 #86 (revision marks compared to v1.0)
23.05.2014	R2-142941	Report of RAN WG2 #85bis as agreed by RAN2 #86

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Appendix 27

3GPP TSG RAN meeting #71 **RP-160524**
Göteborg, Sweden, March 7 – 10, 2016

Agenda Item: 3

Source: ETSI MCC

Title: Report of 3GPP TSG RAN meeting #70,
Sitges, Spain, December 7 – 10, 2015

Document for: Approval

Report of 3GPP TSG RAN meeting #70

held in Sitges, Spain
December 7 – 10, 2015



colour code:
green: approved new TSs/TRs/WIs/SIs/Report/Exception
grey: outgoing LSs/LTIs
red: WI/SI closed/completed or moved to next REL
purple: pendingTdocs

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Meeting Organisation

Meeting:	3GPP TSG RAN #70		
Meeting location:	Sitges, Spain		
	Melia Sitges hotel, Tramuntana room		
Duration:	Monday 07.12.2015 (9am) - Thursday 10.12.2015 (5pm)		
Host:	European Friends of 3GPP (EF3)		
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Technical documents:	ftp://ftp.3gpp.org/tsg_ran/TSGR_70/Docs		
next meetings:	TSG RAN #71	07.03. - 10.03.2016	Göteborg, Sweden	host: EF3
	TSG RAN #72	13.06. - 16.06.2016	tbd, Korea	host: TTA

Executive Summary

3GPP TSG RAN meeting #70 was held in Sitges, Spain, Dec. 7-10, 2015, hosted by the European Friends of 3GPP (EF3). The meeting had 236 participants (see Annex A) and 672 Technical Documents (see Annex B).

Main topics/decisions:

- **block approval**: RAN #70 continued to use "block approval process" for agreed CR packages from WGs and WI/SI status reports, i.e. these contributions were only discussed on request (flag) otherwise the CRs were considered approved and the % complete and target date of the status reports were considered approved.
- **time budget analysis (AI 14)**: RAN #70 assessed the modified time budget requests in WI/SI status reports for already approved WIs/SIs relative to the time budget status endorsed by RAN #69 in RP-151600; the RAN WG chairmen provided their estimates of remaining time budgets in their WGs (see WG status reports in AI 8); new WIs/SIs provided their time budget requests in the WI/SI descriptions (see AI 14); the resulting endorsed time budget allocations for all approved WIs/SIs after RAN #70 is provided in **RP-152300** (1 time unit ~ 2h). RAN5 WIs/SIs are excluded from this time budget handling.
- **REL-12:** Last open REL-12 performance part WI LTE_D2D_Prox-Perf was completed (Core part was completed in March 15). So only RAN5 is still working on REL-12 WIs.
- **REL-13:** REL-13 was frozen at RAN #70, exceptions were granted for 20 REL-13 Core part WIs (12 of them spectrum related) to be completed by March 16. In addition the WI NB_IOT-Core will be kept in REL-13 following PCG request PCG34_39r2. Note: The REL-13 ASN.1 freeze is planned for March 16.
- **REL-14**: With RP-152228 RAN confirmed the planned Rel-14 stage-3 freeze date: March 2017 (note: At the same time also the so far tentative SA planning for REL-15/REL-16 was confirmed in order to clarify the timeplan for the 3GPP submission to ITU-R for IMT-2020: Rel-15 stage-3 freeze in June 2018, Rel-16 stage-3 freeze in Dec 2019).

- **Next generation**:
  - A RAN ad hoc on scenarios and requirements for the next generation access was scheduled for mid Q1-16 (28.-29.01.2016 in Barcelona) to make sure that by RAN#71 we have an initial set of requirements for the technology work to start in the WGs without delay after RAN #71 (see RP-152228).
  - The RAN ITU-R ad hoc group is tasked to prepare for RAN#71 a plan (as a living document) for the interaction with ITU-R for IMT 2020 (see RP-152228 and ACTION_ITEM_1).
  - RAN WG chairs were tasked to prepare plans for RAN #71 on how to accomodate then the work on the next generation in addition to the existing WG capacity that will continue to be dedicated to the LTE evolution and HSPA enhancements (see RP-152228 and ACTION_ITEM_2).
  - A plan for RAN-SA coordination for 2nd half of 2016 will be endorsed by RAN #71.

- **New TDD configurations:** Agreement to introduce a downlink-only TDD configuration for the new 5G RAT in phase-1 (Rel-15) in a band agnostic manner (the principles described in the conclusion of TR 36.825 still apply when introducing DL-only TDD configuration) but no consensus to introduce new TDD configurations to LTE (see RP-152261 under AI 14.1.1).

- **CA basket WI**: As planned by RAN #69 (RP-151172), RAN #70 (see RP-151862) introduced this concept for REL-14, i.e. not each CA combination has an own WI but for 8 different types of CA combinations (intra-band, 2DL/1UL, 3DL/1UL, 4DL/1UL, 5DL/1UL, 2DL/2UL, xDL/2UL (x=3, 4, 5), 3DL/3UL) basket WIs are started which will be open until the end of REL-14 and which will include corresponding CA combinations that can complete independently. TRs of the basket WIs will use 36.714-xx-xx multipart specs and new CA combinations will be reviewed by RAN4 beforehand. Each basket WI will have an own status report to RAN #71 (note: For REL-13 CA combinations that got an exception granted still the old approach with one CA spreadsheet status report for all exceptions will be used for RAN #71).

- **Narrowband Internet of Things (NB_IOT, AI 11.7.17):** WI was kept in REL-13 (following PCG request PCG34_39r2) and the target date is now March 16 (status report: RP-151931). Two way forwards on NB-IOT bands (RP-152268) and on S1 signalling solutions for non-NB-IoT UEs (RP-152285; see also LSout RP-152296) were endorsed and an LS regarding first transmission after the first UL random access was sent to RAN1 (cc: RAN2) in RP-152299. The WID was revised in RP-152284 introducing an additional Perf. part.

- **Indoor positioning enhancements (UTRA_LTE_iPos_enh, AI 11.6.6)**: a revised WID was approved in RP-152251 removing RAT dependent positioning enhancements (which are intended to be addressed in REL-14); for the remaining REL-13 WI the Core part was completed (note: RAN #69 decided to not consider a REL-13 exception;

- **Terms of Reference (ToR)**: revised ToR for 2016 were approved for MCC TF160 in RP-151670.
  Draft versions for new ToR for RAN (RP-151781; will cover also GERAN), RAN5 (RP-151783; will include GERAN3 aspects) and a new RAN6 (RP-151784; will cover GERAN1 and GERAN2) were provided and an email discussion was scheduled to discuss them further until RAN #71.
  NOTE: GERAN and their WGs will have their last meetings in May 2016. Afterwards RAN has to cover also GERAN aspects.

- **ITU-R:**
  - Intelligent Transport Systems: An LS answer to incoming LS from ITU-R WP5A/TEMP/310(Rev.1) = RP-151655 was postponed. RAN ITU-R ad hoc will prepare a draft reply for RAN #71.
  - ITU-R M.1457: Prepared by the RAN ITU-R ad hoc and reviewed by CT and RAN, a letter to ITU-R WP5D was provided to SA #70 in RP-152244. Final answer will be sent out from PCG.
  - Unwanted emissions: Based on RAN4 and RAN5 inputs a reply letter to ITU-R WP5D/TEMP/619 = RP-151140 was sent out to SA in RP-152245. Final answer will be sent out from PCG.

- Incoming Liaison Statements/Letters to ITU: 27, see Annex C

- Outgoing Liaison Statements/Letters to ITU: 8, see Annex D

- 184 closed work items (WI) in Dec. 2015 (101 Core, 80 Perf., 3 Testing):

  - 5 RAN1 REL-13 Core part:
    - Core part: Downlink TPC Enhancements for UMTS (680159, UTRA_EDL_TPC-Core)*
    - Core part: Netw.-Assisted Interf. Cancellation & Suppression for UMTS (690162, UTRA_NAICS-Core) **
    - Core part: LTE CA Enhancement Beyond 5 Carriers (660172, LTE_CA_enh_b5C-Core)*
    - Core part: Licensed-Assisted Access using LTE (680160, LTE_LAA-Core)*
    - Core part: Elevation Beamforming/FD-MIMO for LTE (680161, LTE_EBF_FDMIMO-Core)*

*: Perf. parts are still ongoing; **: WI has no Perf. part

- 10 RAN2 REL-13 Core part:
  - Core part: Support of EVS over UTRAN CS (660173, EVSoCS_UTRAN-Core) **
  - Core part: L2/L3 DL enh. for UMTS (680162, UTRA_EDL_L23-Core) **
  - Core part: Power saving enh. for UMTS (680163, UTRA_SDATA_POWSAV-Core); Perf. part for this Core part was started at RAN #70
  - Core part: Dual Carrier HSUPA enhancements for UTRAN CS (690164, DC_HSUPA_CS-Core); **
  - Core part: RAN aspects of Application specific Congestion control for Data Communication (670159, ACDC-RAN-Core) **
  - Core part: Indoor Positioning enhancements for UTRA and LTE (690167, UTRA_LTE_iPos_enh-Core)*
  - Core part: Dual Connectivity enhancements for LTE (670155, LTE_dualC_enh-Core)*
  - Core part: Multicarrier Load Distribution of UEs in LTE (670156, LTE_MC_load-Core)*
  - Core part: Support of single-cell point-to-multipoint transmission in LTE (680164, LTE_SC_PTM-Core) see completed Perf. part under RAN4 below
  - Core part: Further Enh. of Minimization of Drive Tests for E-UTRAN (690165, LTE_eMDT2-Core) **

  *: Perf. parts are still ongoing; **: WI has no Perf. part

- 5 RAN3 REL-13 Core part:
  - Core part: RAN aspects for improvements to CS/PS coordination in UTRAN Shared Network (670160, CSPS_Coord-UTRA-Core) **
  - Core part: RAN sharing enhancements for UMTS (680167, RSE_UTRA_GUSH-Core) **
  - Core part: Dedicated Core Networks (680166, DECOR-UTRA_LTE-Core) **
  - Core part: RAN Aspects of RAN Sharing Enhancements for LTE (650121, RSE-RAN_LTE-Core) **
  - Core part: Extension of Dual Connectivity in E-UTRAN (680165, LTE_dualC_ext-Core) **

  **: WI has no Perf. part

- RAN4 (81 Core, 80 Perf.):

  1 REL-12 Perf. parts for:
  - LTE Device to Device Proximity Services (630230, LTE_D2D_Prox-Perf)

  3 REL-13 Core part for:
  - HSPA Dual-Band UL CA (660180, HSUPA_DB_MC-Core)
  - LTE DL 4 Rx antenna ports (670161, LTE_4Rx_AP_DL-Core)
  - LTE FDD in the Bands 1980-2010 MHz and 2170-2200MHz for Region 3 (700178 LTE_1980_2170_REG3-Core); note: This WI was just started at RAN #70.

  78 REL-13 features with Core & Performance parts for:
  - LTE Adv. inter-band CA of Band 1 and Band 40 (650X41, LTE_CA_B1_B40)
  - LTE Adv. inter-band CA of Band 3 and Band 41 (660X82, LTE_CA_B3_B41)
  - LTE Adv. inter-band CA for Band 5 and Band 38 (690X73, LTE_CA_B5_B38)
  - LTE Adv. inter-band CA of Band 8 and Band 27 (620X23, LTE_CA_B8_B27); note: Core and Perf. part of this feature were stopped before completion.
  - LTE Adv. inter-band CA of Band 20 and Band 40 (650X40, LTE_CA_B20_B40)
  - European 700 Suppl. DL band (738-758 MHz) in E-UTRA and LTE CA (2DL/1UL) with Band 20 (680X75, LTE_CA_700EU_B20)
  - LTE Adv. 3 Band CA (3DL/1UL) of Band 1, Band 3 and Band 7 (661X00, LTE_CA_B1_B3_B7)
  - LTE Adv. 3 band CA (3DL/1UL) of Band 1, Band 3 and Band 40 (660X90, LTE_CA_B1_B3_B40)
  - LTE Adv. 3 band CA (3DL/1UL) of Band 1, Band 8 and Band 40 (660X91, LTE_CA_B1_B8_B40)
  - LTE Adv. 3 Band CA (3DL/1UL) of Band 1, Band 11 and Band 18 (690X74, LTE_CA_B1_B11_B18)
  - LTE Adv. 3 Band CA (3DL/1UL) for Band 3, Band 7 and Band 38 (680X81, LTE_CA_B3_B7_B38)
  - LTE Adv. 3 Band CA (3DL/1UL) for Band 3, Band 8 and Band 27 (620X32, LTE_CA_B3_B8_B27) note: Core and Perf. part of this feature were stopped before completion.
  - LTE Adv. 3 band CA (3DL/1UL) of Band 3, Band 8 and Band 40 (660X92, LTE_CA_B3_B8_B40)
  - LTE Adv. 3 Band CA (3DL/1UL) of Band 3, Band 41, and Band 41 (690X77, LTE_CA_B3_B41_B41)
  - LTE Adv. 3 Band CA (3DL/1UL) for Band 3, Band 41 and Band 42 (690X76, LTE_CA_B3_B41_B42)
  - Add. BCS for LTE Adv. 3 Band CA (3DL/1UL) of Band 4, Band 4 and Band 7 (670X70, LTE_CA_B4_B4_B7_BWset)
  - Add. BCS for LTE Adv. 3 Band CA (3DL/1UL) of Band 4, Band 7 and Band 12 (670X71, LTE_CA_B4_B7_B12_BWset)
  - LTE Adv. 3 Band CA (3DL/1UL) of Band 5, Band 40, and Band 40 (690X75, LTE_CA_B5_B40_B40)
  - LTE Adv. 3 Band CA (3DL/1UL) of Band 7, Band 20 and Band 38 (670X74, LTE_CA_B7_B20_B38)

- LTE Adv. 3 Band CA (3DL/1UL) for Band 7, Band 42 and Band 42 (680X79, LTE_CA_B7_B42_B42)
- LTE Adv. 3 Band CA (3DL/1UL) of Band 28, Band 40 and Band 40 (660X97, LTE_CA_B28_B40_B40)
- LTE Adv. 3 Band CA (3DL/1UL) of Band 28, Band 41 and Band 41 (680X82, LTE_CA_B28_B41_B41)
- LTE Adv. 3 Band CA (3DL/1UL) of Band 28, Band 42 and Band 42 (680X83, LTE_CA_B28_B42_B42)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 5 and Band 40 (670X78, LTE_CA_B1_B3_B5_B40)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 7 and Band 8 (670X79, LTE_CA_B1_B3_B7_B8)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 8 and Band 40 (690X82, LTE_CA_B1_B3_B8_B40)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 19 and Band 42 (680X86, LTE_CA_B1_B3_B19_B42)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 42 and Band 42 (680X87, LTE_CA_B1_B3_B42_B42)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 19, Band 21 and Band 42 (680X90, LTE_CA_B1_B19_B21_B42)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 19, Band 42 and Band 42 (680X88, LTE_CA_B1_B19_B42_B42)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 1, Band 21, Band 42 and Band 42 (680X91, LTE_CA_B1_B21_B42_B42)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 4 and Band 4 (670X77, LTE_CA_B2_B2_B4_B4)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 4 and Band 5 (680X94, LTE_CA_B2_B2_B4_B5)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 4 and Band 12 (670X76, LTE_CA_B2_B2_B4_B12)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 5 and Band 12 (681X00, LTE_CA_B2_B2_B5_B12)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 5 and Band 30 (661X04, LTE_CA_B2_B2_B5_B30)
- LTE Adv. 4-Band CA (4DL/1UL) of Band 2, Band 2, Band 12 and Band 12 (680X95, LTE_CA_B2_B2_B12_B12)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 12 and Band 30 (661X03, LTE_CA_B2_B2_B12_B30)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 29 and Band 30 (661X05, LTE_CA_B2_B2_B29_B30)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 4 and Band 5 (690X81, LTE_CA_B2_B4_B4_B5); note: This was originally a REL-14 feature.
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 4 and Band 12 (670X75, LTE_CA_B2_B4_B4_B12)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 5 and Band 12 (680X93, LTE_CA_B2_B4_B5_B12)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 5 and Band 29 (670X80, LTE_CA_B2_B4_B5_B29)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 5 and Band 30 (661X07, LTE_CA_B2_B4_B5_B30)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 12 and Band 30 (661X06, LTE_CA_B2_B4_B12_B30)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 29 and Band 30 (661X08, LTE_CA_B2_B4_B29_B30)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 5, Band 12 and Band 12 (681X01, LTE_CA_B2_B5_B12_B12)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 3, Band 7, Band 7 and Band 28 (690X85, LTE_CA_B3_B7_B7_B28)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 3, Band 19, Band 42 and Band 42 (680X89, LTE_CA_B3_B19_B42_B42)
- LTE Adv. 4 Band CA (4DL/1UL) for Band 3, Band 28, Band 40 and Band 40 (690X83, LTE_CA_B3_B28_B40_B40)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 5 and Band 12 (690X80, LTE_CA_B4_B4_B5_B12); note: This was originally a REL-14 feature.
- LTE Adv. 4 Band CA (4DL/1UL) of Band 19, Band 21, Band 42 and Band 42 (680X92, LTE_CA_B19_B21_B42_B42)

- LTE Adv. 4 Band CA (4DL/1UL) of Band 25, Band 41, Band 41 and Band 41 (661X09, LTE_CA_B25_B41_B41_B41)
- LTE Adv. 4 Band CA (4DL/1UL) for Band 28, Band 40, Band 40 and Band 40 (690X84, LTE_CA_B28_B40_B40_B40)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 39, Band 39, Band 41 and Band 41 (690X79, LTE_CA_B39_B39_B41_B41)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 39, Band 41, Band 41 and Band 41 (690X78, LTE_CA_B39_B41_B41_B41)
- LTE Adv. 4 Band CA (4DL/1UL) of Band 41, Band 41, Band 42 and Band 42 (680X84, LTE_CA_B41_B41_B42_B42)
- LTE Adv. 5 Band CA (5DL/1UL) of Band 1, Band 3, Band 19, Band 42 and Band 42 (690X89, LTE_CA_B1_B3_B19_B42_B42)
- LTE Adv. 5 Band CA (5DL/1UL) of Band 1, Band 19, Band 21, Band 42 and Band 42 (690X90, LTE_CA_B1_B19_B21_B42_B42)
- LTE Adv. dual uplink inter-band CA Class A1 in REL-13 (661X10, LTE_CA_2UL_R13-A1)
- LTE Adv. dual uplink inter-band CA Class A2 in REL-13 (661X11, LTE_CA_2UL_R13-A2)
- LTE Adv. dual uplink inter-band CA Class A3 in REL-13 (661X12, LTE_CA_2UL_R13-A3)
- LTE Adv. dual uplink inter-band CA Class A4 in REL-13 (670X82, LTE_CA_2UL_R13-A4)
- LTE Adv. dual uplink inter-band CA FDD-TDD (670X81, LTE_CA_2UL_FDD_TDD)
- LTE Adv. 3DL/2UL inter-band CA (670X83, LTE_CA_3DL_2UL)
- LTE Adv. 3DL/2UL mixed intra- and inter-band CA (681X02, LTE_CA_3DL_2UL_inter_intra)
- LTE Adv. 3 Band CA (3DL/3UL) of Band 39, Band 39 and Band 41 (690X94, LTE_CA_3DL3UL_B39_B39_B41)
- LTE Adv. 3 Band CA (3DL/3UL) of Band 39, Band 41 and Band 41 (690X93, LTE_CA_3DL3UL_B39_B41_B41)
- LTE Adv. intra-band contiguous CA in Band 5 (681X03, LTE_CA_C_B5)
- LTE Adv. intra-band contiguous CA in Band 8 (670X85, LTE_CA_C_B8)
- LTE Adv. intra-band non-contiguous CA in Band 5 (681X05, LTE_CA_NC_B5)
- Add. BCS for LTE Adv. intra-band non-contiguous CA in Band 7 (690X95, LTE_CA_NC_B7_BWset)
- LTE Adv. intra-band contiguous CA in Band 42 for 4DL (670X86, LTE_CA_C_B42_4DL)
- LTE Adv. intra-band non-contiguous CA in Band 41 for 4 DL (661X13, LTE_CA_NC_B41_4DL)
- LTE Adv. intra-band non-contiguous CA in Band 42 for 4DL (681X06, LTE_CA_NC_B42_4DL)
- 2GHz FDD LTE Band for Region 1 (1980-2010MHz and 2170-2200MHz Bands) (640X36, LTE_1980_2170_REG1)
- AWS-Extension Band for LTE (670X62, LTE_AWS_EXT)
- Introduction of 1447-1467MHz Band for TD-LTE in China (680X72, LTE_TDD_1447MHz_China)

1 REL-13 Perf. part for:
- Support of single-cell point-to-multipoint transmission in LTE (680264, LTE_SC_PTM-Perf)

- 3 RAN5 UE Conformance Test Aspects for:
  - REL-12, L-band for Suppl. DL in E-UTRA and UTRA (670047, LTE_UTRA_SDL_BandL-UEConTest)
  - REL-13, Perf. Requirements of Interf. Cancellation and Suppression Receiver for SU-MIMO for E-UTRA (670052, LTE_SUMIMO_RX-UEConTest)
  - REL-13, Core Requirements for Uplink 64QAM for E-UTRA (680069, LTE_UL64QAM-UEConTest)

- 6 closed REL-13 study items (SI) in Dec. 2015:
  - RAN1: Study on Downlink Multiuser Superposition Transmission for LTE (670043, FS_LTE_MUST)
  - RAN4: Study on LTE FDD in the bands 1980-2010 MHz and 2170-2200 MHz (570022, FS_LTE_1980_2170_Korea)
  - RAN4: Study on LTE Advanced inter-band CA of Band 20 and Band 28 (680056, FS_LTE_CA_B20_B28)
  - RAN4: Study on new AWS-3/4 Band for LTE (690061, FS_LTE_AWS_3_4)
  - RAN4: Study on performance enhancements for high speed scenario in LTE (660071, FS_LTE_high_speed)
  - RAN4: Study on Measurement gap enhancement for LTE (670044, FS_LTE_meas_gap)

- 2 WIs and 1 SI shifted from REL-13 to REL-14:
  - LTE_CA_B3_B20_B32-Core, LTE_CA_B3_B20_B32-Perf, FS_LTE_NW_SYNC

- 4 WIs shifted back from REL-14 to REL-13 (as they were completed in Dec.15):
  - LTE_CA_B4_B4_B5_B12-Core, LTE_CA_B4_B4_B5_B12-Perf
  - LTE_CA_B2_B4_B4_B5-Core, LTE_CA_B2_B4_B4_B5-Perf

- 20 REL-13 Core part WIs that got an exception granted to complete by March 16 but still in REL-13:

1 in RAN1:
- Further LTE Physical Layer Enhancements for MTC (LTE_MTCe2_L1-Core): RP-152217

Note:Narrowband Internet of Things (IOT) (NB_IOT-Core) is kept in REL-13 because of PCG34_39r2.

4 in RAN2:
- Enhanced LTE Device to Device Proximity Services (LTE_eD2D_Prox-Core): RP-151954
- RAN enhancements for extended DRX in LTE (LTE_extDRX-Core): RP-151951
- LTE-WLAN Radio Level Integration and Interworking Enh. (LTE_WLAN_radio-Core): RP-151963
- LTE-WLAN RAN Level Integr. supporting legacy WLAN (LTE_WLAN_radio_legacy-Core): RP-152235*

*: NOTE: RAN #70 overwrote here the RAN #69 decision to not grant an exception for this WI.

15 in RAN4:
- LTE UE TRP and TRS and UTRA Hand Phantom related UE TRP and TRS Requirements (LTE_UTRA_TRP_TRS-Core): RP-151915
- Base Station (BS) RF requirements for AAS (AAS_BS_LTE_UTRA-Core): RP-151810
- Radiated req. for the verification of multi-antenna reception perf. of UEs (UTRA_LTE_MIMO_OTA-Core): RP-151870
- 700MHz E-UTRA FDD Band for Arab Region (LTE_FDD_700_ARAB-Core): RP-151716
- LTE Adv. 3 band CA (3DL/1UL) of Band 1, Band 8 and Band 28 (LTE_CA_B1_B8_B28-Core): RP-151719
- LTE Adv. 3 band CA (3DL/1UL) of Band 3, Band 8 and Band 28 (LTE_CA_B3_B8_B28-Core): RP-151720
- LTE Adv. 3 Band CA (3DL/1UL) of Band 8, Band 42 and Band 42 (LTE_CA_B8_B42_B42-Core): RP-151721
- LTE Adv. 3 Band CA (3DL/1UL) of Band 2, Band 7 and Band 12 (LTE_CA_B2_B7_B12-Core): RP-152021
- LTE Adv. 3 Band CA (3DL/1UL) of Band 2, Band 4 and Band 7 (LTE_CA_B2_B4_B7-Core): RP-152020
- LTE Adv. 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 7 and Band 12 (LTE_CA_B2_B4_B7_B12-Core): RP-152022
- LTE Adv. 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 5 and Band 30 (LTE_CA_B4_B4_B5_B30-Core): RP-152122
- LTE Adv. 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 12 and Band 30 (LTE_CA_B4_B4_B12_B30-Core): RP-152123
- LTE Adv. 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 29 and Band 30 (LTE_CA_B4_B4_B29_B30-Core): RP-152124
- LTE Adv. 5 Band CA (5DL/1UL) of Band 1, Band 3, Band 7, Band 7 and Band 28 (LTE_CA_B1_B3_B7_B7_B28-Core): RP-151987
- LTE Adv. 5 Band CA (5DL/1UL) of Band 3, Band 3, Band 7, Band 7 and Band 28 (LTE_CA_B3_B3_B7_B7_B28-Core): RP-151989

- 38 new approved work items (WI) in Dec. 2015 (17 Core, 16 Perf., 5 Testing):

  - 2 RAN1 REL-14:
    - Core part: Enhanced LAA for LTE RP-152272
    - Core part: Support for V2V services based on LTE sidelink RP-152293

  - 2 RAN2 REL-14:
    - Core part: RRC optimization for UMTS RP-152267
    - Core part: DTX/DRX enhancements in CELL_FACH RP-152286

  - RAN4 (13 Core, 16 Perf.):
    REL-13 Core parts:
    - Core part: LTE FDD in the Bands 1980-2010 MHz and 2170-2200MHz for Region 3 RP-152238
      (WI was started and also completed at RAN #70, linked to REL-13 WI LTE_1980_2170_REG3-Core)

    REL-14 Performance parts:
    - Perf. part: Power saving enhancements for UMTS RP-151998*
    - Perf. part: Narrowband Internet of Things (IOT) RP-152284*
    - Perf. part: Enhanced LAA for LTE RP-152272
    - Perf. part: Support for V2V services based on LTE sidelink RP-152293

    *: For these 2 new Perf. parts the Core part WIs existed already.

    REL-14 Core & Performance parts:
    - LTE Advanced intra-band CA for xDL/yUL incl. contiguous and non-contiguous spectrum RP-152250

  - LTE Advanced inter-band CA Rel-14 for 2DL/1UL RP-152196
  - LTE Advanced inter-band CA Rel-14 for 3DL/1UL RP-152278
  - LTE Advanced inter-band CA Rel-14 for 4DL/1UL RP-152249
  - LTE Advanced inter-band CA Rel-14 for 5DL/1UL RP-151671
  - LTE Advanced inter-band CA Rel-14 for 2DL/2UL RP-152237
  - LTE Advanced inter-band CA Rel-14 for xDL/2UL with x=3,4,5 RP-152246
  - LTE Advanced inter-band CA Rel-14 for 3DL/3UL RP-152241
  - AWS-3/4 Band for LTE RP-151731
  - LTE 2.6 GHz FDD Suppl. DL band (2570-2620 MHz) and LTE CA (2DL/1UL) with Band 3 for region 1 RP-152253
  - Multi-Band Base Station testing with three or more bands RP-152205
  - Performance enhancements for high speed scenario in LTE RP-152263

- 5 RAN5 UE Conformance Test Aspects for:
  - REL-12, Increasing the min. number of carriers for UE monitoring in UTRA and E-UTRA RP-151763
  - REL-13, Rel-13 LTE CA configurations RP-151764
  - REL-13, LTE DL 4 Rx antenna ports RP-151765
  - REL-13, Licensed-Assisted Access using LTE RP-151766
  - REL-13, AWS-Extension Band for LTE (Band 66) RP-151767

- 2 new approved study items (SI) for REL-14 in Dec. 2015:

  - RAN: Study on Scenarios and Requirements for Next Generation Access Technologies RP-152257
  - RAN1: Study on Multi-Carrier Enhancements for UMTS RP-152290

- 0 new approved Technical Specifications (TS), i.e. now under CR control

- 16 new approved Technical Reports (TR), i.e. now under CR control:

- RAN1 Rel-13 TR 36.859	FS_LTE_MUST	RP-151924
- RAN4 Rel-13 TR 36.833-7-42	LTE_CA_C_B42_4DL-Core	RP-151843
- RAN4 Rel-13 TR 36.833-8-41	LTE_CA_NC_B41_4DL-Core	RP-151678
- RAN4 Rel-13 TR 36.857-13	LTE_CA_B1_B3_B19_B42_B42-Core	RP-152190
- RAN4 Rel-13 TR 36.860-13	LTE_CA_2UL_R13-A1-Core	RP-151816
- RAN4 Rel-13 TR 36.861	FS_LTE_1980_2170_Korea	RP-151858
- RAN4 Rel-13 TR 36.862	LTE_1980_2170_REG1-Core	RP-152187
- RAN4 Rel-13 TR 36.869	LTE_AWS_EXT-Core	RP-152189
- RAN4 Rel-13 TR 36.870	FS_LTE_AWS_3_4	RP-152188
- RAN4 Rel-13 TR 36.878	FS_LTE_high_speed	RP-151814
- RAN4 Rel-13 TR 36.879-13	LTE_CA_3DL_2UL-Core	RP-151930
- RAN4 Rel-13 TR 36.892	LTE_TDD_1447MHz_China-Core	RP-151813
- RAN4 Rel-13 TR 36.894	FS_LTE_meas_gap	RP-152192
- RAN4 Rel-13 TR 36.895	LTE_CA_700EU_B20-Core	RP-152240
- RAN4 Rel-13 TR 36.899-13	LTE_CA_3DL3UL_B39_B39_B41-Core	RP-152191
- RAN5 Rel-12 TR 36.905	LTE_UTRA_SDL_BandL-UEConTest	RP-151772

- 5 new Technical Specifications (TS) provided for information

  -

- RAN3 Rel-13 TR 36.461	LTE_WLAN_radio-Core	RP-151742
- RAN3 Rel-13 TR 36.462	LTE_WLAN_radio-Core	RP-151865
- RAN3 Rel-13 TR 36.463	LTE_WLAN_radio-Core	RP-151958
- RAN3 Rel-13 TR 36.464	LTE_WLAN_radio-Core	RP-151985
- RAN3 Rel-13 TR 36.465	LTE_WLAN_radio-Core	RP-151986

- 3 new Technical Reports (TR) provided for information:

- RAN3 Rel-13 TR 36.898	FS_LTE_NW_SYNC	RP-151808
- RAN4 Rel-13 TR 36.852-13	LTE_CA_B3_B38-Core	RP-151912
- RAN4 Rel-13 TR 36.854-13	LTE_CA_B2_B2_B5_B30-Core	RP-152195

- Change request statistics (see also Annex E): 1484 CRs handled with 1457 approved CRs.

Phase	Cat	all CRs	Approved CRs	approved RAN1	approved RAN2	approved RAN3	approved RAN4	approved RAN5
Rel-8	B	1	1	0	0	0	1	0
Rel-9	B	3	3	0	0	0	3	0
Rel-9	F	2	2	0	0	0	2	0
Rel-10	A	2	2	0	0	0	2	0
Rel-10	B	8	8	0	0	0	8	0
Rel-10	C	3	3	0	3	0	0	0
Rel-10	D	1	1	0	0	0	1	0
Rel-10	F	20	20	0	3	0	10	7
Rel-11	A	17	16	0	6	0	10	0
Rel-11	B	19	19	0	0	0	18	1
Rel-11	F	83	83	0	4	0	37	42
Rel-12	A	56	55	0	10	0	45	0
Rel-12	B	64	64	0	0	0	21	43
Rel-12	C	5	3	0	3	0	1	0
Rel-12	D	1	1	0	0	0	0	0
Rel-12	F	703	700	8	31	2	60	599
Rel-13	A	95	95	0	7	1	87	0
Rel-13	B	345	327	25	107	57	138	0
Rel-13	C	6	6	0	2	4	0	0
Rel-13	D	1	1	0	0	0	1	0
Rel-13	F	47	47	2	2	3	23	17
sum		1482	1457	35	178	67	468	709

1 Opening of the Meeting

TSG RAN chairman Mr. Dino Flore (Qualcomm) opened the meeting 3GPP TSG RAN #70 on Monday Dec. 7th, 2015 at 9am.
On behalf of the host, the European Friends of 3GPP, Kevin Holley (Telefonica) welcomed the delegates to Sitges, Spain and explained organisational issues of the meeting.

NOTE: The TSG meetings #70 will be carried out in the 1 week TSG set up (see RP-131328, RAN/CT at the beginning and SA at the end of the week).

2 Reminders for usage of IT resources, IPR declaration and antitrust compliance

The TSG RAN chairman made the following three announcements to remind the delegates of this meeting:

RAN chair's reminder regarding responsible behaviour regarding IT resources of the meeting:

Delegates are reminded that they share the meeting IT resources with their fellow delegates. You should not abuse the service by using bandwidth-hogging applications such as movie downloads, streaming video, web-based gaming, etc during the meeting. Use the internet service in your hotel rooms for this!
Delegates must respect the law of the hosting country*, and should not visit prohibited internet sites.*
In cases of persistent abuse of the internet bandwidth, MCC may restrict individual's use of the service.
In particular, the PCG has laid down the following network usage conditions:
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 are 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 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)***

Based on the report of the PCG ad hoc group on IT improvements:
http://www.3gpp.org/ftp/PCG/PCG_27/DOCS/PCG27_13r1.zip
see also http://www.3gpp.org/Delegates-Corner#outil_sommaire_14

RAN chair's reminder regarding IPRs:

The attention of the delegates to the meeting of this Technical Specification Group was 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 thereby 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 Information Statement and the Licensing declaration forms***

Based on http://www.3gpp.org/3gpp-calendar/89-call-for-ipr-meetings

RAN chair's reminder regarding antitrust and competition law:

The attention of the delegates to the meeting was drawn to the fact that 3GPP activities were subject to all applicable antitrust and competition laws and that compliance with said laws was therefore required by any participant of the meeting, including the Chairman and Vice-Chairmen and were invited to seek any clarification needed with their legal counsel. The leadership would conduct the present meeting with impartiality and in the interests of 3GPP. Delegates were reminded that timely submission of work items in advance of TSG/WG meetings was important to allow for full and fair consideration of such matters.

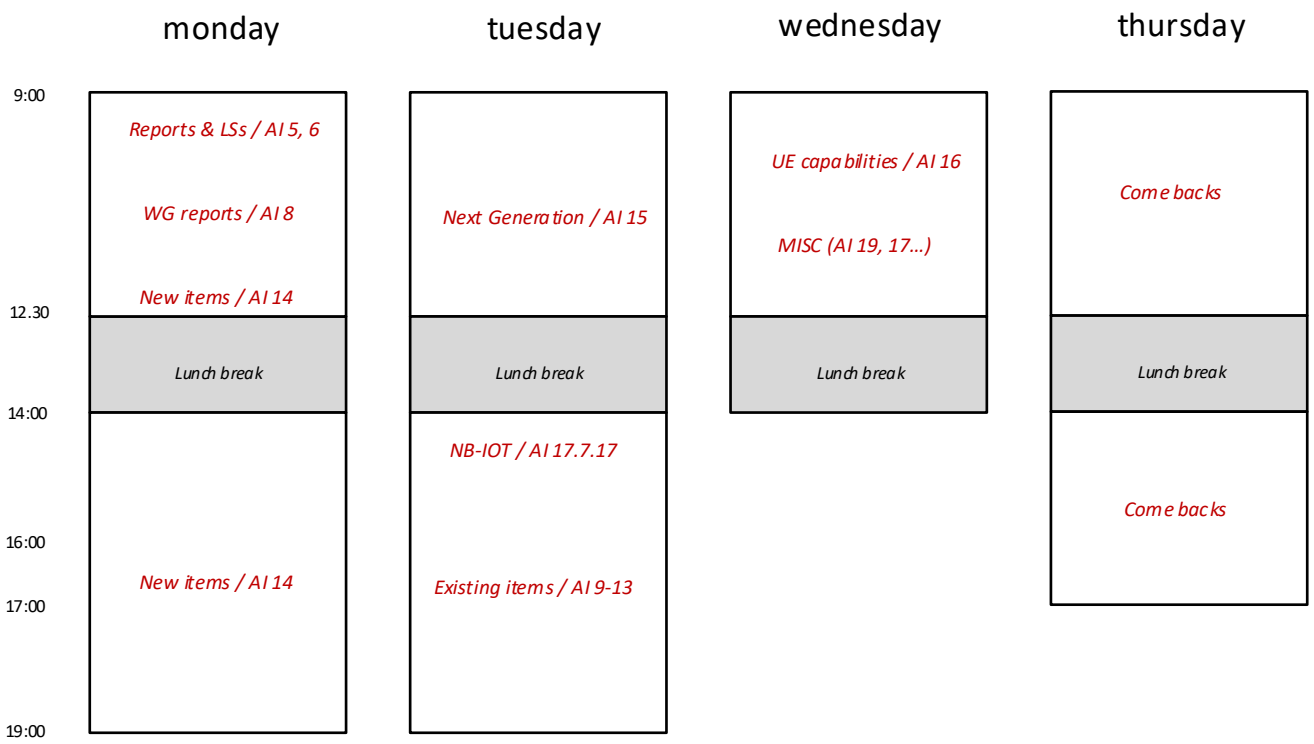
Based on http://www.3gpp.org/about-3gpp/legal-matters/21-3gpp-calendar/1616-statement-of-antitrust-compliance

3 Approval of the Agenda

NOTE: Agreed CR packages of RAN WGs (if not flagged for discussion) will be approved without presentation. % complete and target dates of WI/SI status reports (if not flagged for discussion) will be approved without presentation.

RP-151629 Agenda for RAN #70 held in Sitges, Spain, 07.12.-10.12.2015 RAN chairman (Qualcomm)
agenda
conclusion: approved

tentative meeting schedule as distributed by the RAN chair on 04.12.2015 over the RAN reflector:



4 Approval of the meeting report of TSG-RAN #69

RP-151630 Draft report of RAN #69 held in Phoenix, USA, 14.09.-16.09.2015 ETSI MCC report
conclusion: revised in RP-152199 before RAN #70 in order to shorten one sentence in the executive summary
RP-152199 Draft report of RAN #69 held in Phoenix, USA, 14.09.-16.09.2015 ETSI MCC report
conclusion: revised in RP-152201 to provide the final report
RP-152201 Report of RAN #69 held in Phoenix, USA, 14.09.-16.09.2015 ETSI MCC report
conclusion: approved

5 Reports from other meetings

5.1 Report from TSG SA

TSG SA #69 was held in Phoenix, USA, on 15-16.09.2015 in parallel to RAN #69.
The draft report of this meeting is available under:
ftp://ftp.3gpp.org/tsg_sa/TSG_SA/TSGS_70/Docs/SP-150577.zip

RAN chairman: we will come later to REL planning under AI 15.

5.2 Report from PCG

PCG #35 was held on 22.10.2015 in Vancouver, Canada. The RAN chairman distributed the following list of highlights via the RAN reflector on 23.10.2015:

Moving GERAN into RAN:
PCG agreed the plan proposed by GERAN and RAN Chairman in PCG35_08r1.

New configuration for LTE TDD (aka SDL for LTE TDD):
PCG tasked RAN to discuss next steps on this topic. CCSA proposed the compromise proposal that a TDD SDL configuration is standardized in the phase 1 of the new 5G radio (PCG35_26). The proposal was simply noted as this was not the right audience to discuss it. It will be discussed at next plenary. I recommend interested companies to think about it.

New marker for LTE:
Based on the OP majority views, it was decided to select “LTE-Advanced Pro” as new marker for LTE. During the discussion it was stressed that this will be just a marker for LTE and not a new full-blown 3GPP brand. 3GPP Marcomm officer will now put together some material to advertise the new marker, which will reviewed by PCG members before publication.

discussion: Note: PCG35_26 is also provided to RAN #70 for information in RP-152186, see AI 14.1.1.
Telecom Italia: will we put the new logo on the specs?
RAN chair: yes, logos will be put on REL-13 specs and onwards

5.3 Report from other meetings

RP-152198 Report of 3GPP RAN workshop on "5G" held in Phoenix, USA, September 17-18, 2015 ETSI MCC report
provided just for information
conclusion: noted

6 Liaison activity of TSG RAN

NOTE: This agenda item will only handle LSs not handled elsewhere.

Explicit Congestion Notification for Lower Layer Protocols:

RP-151649 LS on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols
(SP-150574; to: SA2, SA4, RAN2, CT1, CT3, CT4; cc: CT, RAN; contact: Samsung) SA
LS in Rel-10 ECSRA_LAA
no RAN action requested
discussion: RAN3 chair: SA likes to collect all information but there is also a RAN3 spec for this which is missing and RAN3 was not asked to respond, should we send an LS to inform SA? RAN chair: you can prepare a draft LS from RAN
conclusion: noted, Huawei will draft an LS to SA in RP-152203

RP-152203 Draft reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (to: SA; cc: RAN3; contact: Huawei) Huawei LS out LSxx Rel-10 ECSRA_LAA
conclusion: revised in RP-152279

RP-152279 Reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (to: SA; cc: RAN3; contact: Huawei) RAN LS out LS02 Rel-10 ECSRA_LAA
conclusion: approved

RP-151646 Reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols
(C1-153966; to: SA; cc: CT, RAN, SA2, SA4, RAN2, CT3, CT4; contact: Ericsson) CT1
LS in Rel-10 ECSRA_LAA
no RAN action requested
conclusion: noted, no LS answer

RP-151647 Reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols
(C3-154252; to: SA; cc: SA2, SA4, RAN2, CT1, CT3, CT4, CT, RAN; contact: Nokia Networks)CT3
LS in Rel-10 ECSRA_LAA
no RAN action requested
conclusion: noted, no LS answer

RP-151662 Reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols
(R2-157038; to: SA; cc: CT, RAN, SA2, SA4, CT1, CT3, CT4; contact: Samsung) RAN2
LS in Rel-10 ECSRA_LAA
ECSRA_LAA = Enabling Coder Selection and Rate Adaptation for UTRAN and E-UTRAN for Load Adaptive Applications; no RAN action requested
conclusion: noted, no LS answer

Licensed Shared Access:

RP-151654 Response to LS Update S5-154456 on Study on OAM support for Licensed Shared Access
(ETSI TC RRS(15)031016r4; to: SA; cc: RAN, SA5; contact: Intel) ETSI TC RRS
LS in Rel-13 FS_OAM_LSA
S5-154456 was not sent to/cc RAN; no RAN action requested
conclusion: noted, no LS answer

Time synchronization:

RP-151659 Reply LS to RP-151555 on work on time synchronization and future target requirements
(ITU-T SG15/COM15–LS298–E; to: RAN; cc: -; contact: Ericsson) ITU-T SG15
LS in Rel-13 -
RAN #69 received ITU-T SG15/COM15-LS266-E = RP-151142 and answered in RP-151555; RAN action requested by 01.02.16
conclusion: noted, no LS answer

Public safety:

RP-151829 Request on the completion of 3GPP Work Items related to the Public Safety according to current Release 13 timelineMinistry of Science, ICT and Future Planning (Republic of Korea) LS in Rel-13 -

LS from Korean Government regarding the completion of 3GPP Work Items related to the Public Safety according to current Release 13 timeline; incoming LSs are only submitted via MCC

conclusion: withdrawn

7 ITU-R Ad hoc

7.1 Status report

RP-151631 Status Report ITU-R Ad hoc ITU-R Ad hoc Contact (Telecom Italia) report
conclusion: noted

7.2 Submission to ITU-R

7.2.1 Submission to ITU-R WP5A

Intelligent Transport Systems (ITS):

RP-151655 LS on the standardization status of Intelligent Transport Systems (ITS) radio interface technologies (ITU-R WP5A/TEMP/310(Rev.1); to: RAN, SA, ARIB, AWG, CCSA, ETSI TC ERM, IEEE, TIA, and TTA; cc: -; contact: ITU-R WP5A Counsellor) ITU-R WP5A
LS in Rel-14 FS_LTE_V2X
RAN action requested for ITU-R WP5A meeting in May 2016;
LS is presented by Huawei
discussion: Orange: research or regulatory activities is not clear from an attachment
Telecom Italia: we need to check with CCSA
Huawei: maybe more than research, we can try to find out
conclusion: noted, LS answer postponed (next ITU-R WP5A meeting will be in May 2016, so RAN has time to finalize the answer in RAN #71 in March 2016)
The RAN ITU-R ad hoc will prepare a draft reply for RAN #71.

7.2.2 Submission to ITU-R WP5D

ITU-R M.1457:

RP-151669 Draft Letter to ITU on final submission for IMT-2000 CDMA DS and IMT-2000 CDMA TDD toward Rev. 13 of Rec. ITU-R M.1457
(RT-150021; to: CT, RAN; cc: -; contact: Telecom Italia) RAN ITU-R ad hoc
LS in Rel-12 -
RAN action requested; this LTI is also provided to CT and CT will reply back to RAN; RAN will finally provide their draft incl. CT comments for review to SA and from there to PCG for approval; ATIS will then provide to approved version to ITU-R WP5D on behalf of the OPs
conclusion: noted, no reply from RAN to ITU-R ad hoc; Telecom Italia will draft an LTI to SA in RP-152219 that will include comments from RAN #70 as well as feedback from CT #70

RP-152219 Draft Letter to ITU on final submission for IMT-2000 CDMA DS and IMT-2000 CDMA TDD toward Rev. 13 of Rec. ITU-R M.1457
(to: SA; cc: -; contact: Telecom Italia) Telecom Italia
LS out Rel-12 -
based on ITU-R ad hoc input RP-151669 this is a draft version to be sent to SA; from there it will go to PCG for approval and then it is submitted by ATIS to ITU-R WP5D on behalf of the OPs
discussion: Telecom Italia: CT had no comments to RT-150021 (=RP-151669)
Ericsson: 25.470 (from REL-12), 25.471 (from REL-10) to be added
conclusion: revised in RP-152244 to provide final version for SA

RP-152244 Draft Letter to ITU on final submission for IMT-2000 CDMA DS and IMT-2000 CDMA TDD toward Rev. 13 of Rec. ITU-R M.1457 (to: SA; cc: -; contact: Telecom Italia) RAN LS out Rel-12 -
revision of RP-152219; this is a draft version to be sent to SA; from there it will go to PCG for approval and then it is submitted by ATIS to ITU-R WP5D on behalf of the OPs
conclusion: agreed, provided to SA on Wed noon

Unwanted emisssions:

RP-151658 Draft Letter to ITU in answer to ITU-R WP5D/TEMP/619 = RP-151140 related to the revision of Recommendations for generic unwanted emission characteristics
(R5-156165; to: RAN; cc: -; contact: Ericsson) RAN5
LS inRel-12 -

RAN5 has drafted a reply to ITU-R WP5D LS received at RAN #69 in RP-151140; before sending it out the LS has to pass SA and PCG review; RAN action requested
conclusion: noted, no RAN LS answer to RAN5

RP-151663 Draft Letter to ITU in answer to ITU-R WP5D/TEMP/619 = RP- 151140 related to the revision of Recommendations for generic unwanted emission characteristics
(R4-158243; to: RAN; cc: -; contact: Ericsson) RAN4
LS in Rel-12 -
RAN4 has drafted a reply to ITU-R WP5D LS received at RAN #69 in RP-151140; before sending it out the LS has to pass SA and PCG review; RAN action requested; compare RP-151658
conclusion: noted, no RAN LS answer to RAN4; Telecom Italia will merge replies from RAN4 and RAN5 into an draft LTI to SA in RP-152218

RP-152218 Draft Letter to ITU in answer to ITU-R WP5D/TEMP/619 = RP- 151140 on IMT-Advanced related to the revision of Recommendations for generic unwanted emission characteristics
(to: SA; cc: -; contact: Telecom Italia) Telecom Italia
LS out Rel-12 -
merging RAN4 reply RP-151663 and RAN5 reply RP-151658 into one reply that is provided to SA for review before it is going to PCG for approval and from there via ATIS to ITU-R WP5D
conclusion: revised in RP-152245 to provide final version for SA

RP-152245 Draft Letter to ITU in answer to ITU-R WP5D/TEMP/619 = RP- 151140 on IMT-Advanced related to the revision of Recommendations for generic unwanted emission characteristics (to: SA; cc: -; contact: Telecom Italia) Telecom Italia LS out Rel-12 -
revision of RP-152218; merging RAN4 reply RP-151663 and RAN5 reply RP-151658 into one reply that is provided to SA for review before it is going to PCG for approval and from there via ATIS to ITU-R WP5D;
conclusion: agreed, provided to SA on Wed noon

7.2.3 Other ITU-R submission

Nothing to report

8 RAN WGs: WG Status Reports & CR Approvals up to Rel-10

Note: REL-4, REL-5, REL-6 and REL-7 were closed after RAN #65, i.e. no CRs to these releases will be considered anymore.

8.1 TSG RAN WG1

8.1.1 Report from RAN WG1 including report on actions required from the previous meeting

RP-151632 Status Report RAN WG1 RAN1 chairman (NTT DOCOMO) report
discussion: Orange: to be discussed: handling of the work load in Q4, etc (see considerations in RP-152019)
Intel: slide 13: typo
RAN chair: will discuss later time unit handling of LTE vs. new RAT, no competition between LTE and new RAT intended (we will discuss this on Tue)
RAN chair: let's treat Orange's RP-152019 now
RAN chair: only after discussing the existing WIs/SIs we will know how much time units are left
Vodafone: would like to know whether LTE and 5G will run in parallel
RAN chair: new radio will not be prioritized over LTE evolution; we also need to be more accurate/strict in the time unit allocation for LTE, we cannot approve as much new WIs as we did in the past
Telecom Italia: any impact on ASN.1 from remaining parts?
RAN1 chair: only RAN1 related issues remaining
RAN2 chair: we got the RAN1 LSs and this is hopefully covering all RAN2 impacts
RAN1 chair: confirmed this
conclusion: noted

RP-151633 List of CRs from RAN WG1 ETSI MCC discussion
conclusion: noted

8.1.2 Discussions on decisions from RAN WG1

No contributions

8.1.3 Approval of CRs to REL-8 WIs and WIs of previous releases

No contributions

8.1.4 Approval of CRs to Rel-9 WIs

No contributions

8.1.5 Approval of CRs to Rel-10 WIs

No contributions

8.1.6 Approval of CRs to Rel-11 WIs

RP-152034 CRs to 36.213 clarifying resources related to EPDCCH RAN1 CR Pack Rel-11 LTE_enh_dl_ctrl
conclusion: approved

8.1.7 Approval of linked CR packages led by RAN WG1

No contributions

8.2 TSG RAN WG2

8.2.1 Report from RAN WG2 including report on actions required from the previous meeting

RP-151634 Status Report RAN WG2 RAN2 chairman (Intel) report
discussion: Orange: to be discussed: handling of the work load in Q4, etc (see considerations in RP-152019)
Ericsson: 8TUs for REL-13 corrections, in the past we had 8TUs but with D2D and ASN.1 was included as well
RAN chair: you can discuss this further during the week with the RAN chairman
conclusion: noted

RP-151635 List of CRs from RAN WG2 ETSI MCC discussion
conclusion: noted

8.2.2 Discussions on decisions from RAN WG2

Workload:

RP-152019 Considerations regarding the work load situation in RAN WG in Q4 2015 and potential impact on the quality of RAN decisions and specifications Orange, Deutsche Telekom discussion Rel-13 -

proposals:

- *RAN WGs should focus in the next quarter on:*
  - *completion of Rel-13 items*
  - *perform the necessary consistency check on agreements reached during the last quarter and followed by email discussions*
  - *coordinate to ensure that cross WGs specification work is aligned*
- *We recommend that no RAN WG rel-14 new SI or WIs are approved in Dec.15*
- *Future work plan and WGs agenda should ensure that the work is completed in due time and that work load is managed and controlled*
- *Clear guidelines should be given to the chairmen of RAN WGs so that the disruptions from last quarter are not repeated. e.g.:*
  - *Possible extensions or change of meeting dates should be announced and agreed at the plenary;*
  - *Not acceptable that official meetings continue after the formal closing time;*
  - *When there are parallel sessions, the time schedule for the different sessions should be stable, making it possible for delegates to jump between sessions.*

discussion: RAN1 chair: we discussed already in Oct. in RAN1 about the extension forLAA and MTCe
Orange: discussing meeting extension for Nov in Oct is short notice, working on 8 consecutive days is illegal in some countries
RAN chair: meeting was in US where this is not illegal
Dish Networks: agrees with Orange concerns, WG should not decide time units themself
RAN chair: admits that this is a valid concern and we need to improve
RAN chair: decision of having a meeting or not is at the end up to the chair; there was some discussion about an ad hoc before (even in Xmas period which was cancelled)
AT&T: frankly speaking operators lean on vendors to get things done, so we need to be honest that this is also operators responsibility
Telecom Italia: we should see the complete picture, RAN1 specs alone are not sufficient
RAN chair: starting assumption is that we will not approve any RAN2/RAN3/RAN4 new WIs/SIs (except spectrum) unless there is a wide support for a WI where the majority considers it urgent; RAN1 may start something; key factor is we need to be more honest with the time budget planning
Deutsche Telekom: agrees that this was a special quarter with the freeze of the REL but we also approved more WIs/SIs in the past than are really useful so we need to improve here
RAN chair: we said in the past that we have to make sure that we are not overshooting the time budget by more than 50% but this quarter we exceeded again 100% for some items and this has to be improved
RAN3 chair: indicates that there is some time budget in RAN3 available
RAN chair: we agreed last time that we would not start more RAN2/RAN3/RAN4 work and that they work on REL-13 completion/ASN.1 freeze

RAN1 vice-chair (ALU): one lesson we learnt: if companies need additional time they must bring the request to RAN; we need to be much more realistic about the needed time units and WG chairs should have the last word on this; approving multiple WIs as a package is probably also not good (we should rather go one by one and see what has highest priority and how much time is left); having a certain overshoot limit is maybe not so fruitfull as this means simply that things get shifted to less transparent offline sessions
RAN2 chair: supports that if a WI needs more time they have to get back to RAN to request more time budget
Nokia Networks: we need to see that we can take some real decisions now and not just some vague intentions that disappear later
RAN chair: companies are free to object the approval of a WI, noone limits this
AT&T: most of the points we could have agreed 5 years ago, if you remember in UMTS times we had even harder times, we need to take into account that decisions taken after ther closing of a meeting could be legally challenged
Orange: we did not have meetings on week-ends in the past and we need a more transparent planning
Telecom Italia: suggests to also not approve any new RAN1 WI/SI and that we need to verify whether we can freeze ASN.1 in March
Ericsson: operators are free to bring more delegates if they are interested in more topics

conclusion: noted

RAN chairman's conclusions:
We will not approve any RAN2/3/4 (except spectrum) new WIs/SIs as REL-13 completion has priority.
WG chairs are reminded to announce plans/inform delegates better.
WG chair and rapporteurs are requested to be more realistic with the time unit requests.

LG: there are some new RAN1 WIs/SIs which will have RAN2 impact
RAN chair: yes, will be take into account
Vodafone: would prefer that additional ad hocs are announced in the RAN meeting
RAN chair: yes, WG chairs are requested to announce planned ad hocs/meetings in the RAN meeting before
TeliaSonera: also the schedule of a meeting should be more transparent
RAN chair: agrees, enough to have it in the WG chairman's report to RAN
RAN2 chair: so also no RAN1 led WIs that have impact on RAN2 time budget?
Orange: if RAN decides just the time units but the WG can have extra meetings then this is not consistent, so the need for meetings need to be discussed at RAN as well
RAN chair: yes, can be discussed at RAN as well
RAN chair: if at the end there is one proposal for a new WI that is not challenged we can still consider it (even if for RAN2/3/4) but the threshold is high for this
Mediatek: also extensions of a meeting should be discussed at RAN?
RAN chair: yes
Oppo: what is a timely announcement?
RAN chair: the RAN plenary before
Mediatek: working procedures talk about 6 months before but for ad hocs is different
RAN chair: RAN plenary before is enough
Orange: we should also avoid that RAN2 WIs are running under RAN1 leadership
RAN chair: agrees

conclusions as displayed on the screen in the meeting:
Chair's Wrap-up (based on RP-152019):
+ No RAN2,3,4 new items to be approved at this Plenary (as agreed to in RAN#69);
+ Completion of R'13 - top priority;
+ Timely discussion and announcement of extra WG meetings, at the Plenary;
+ Great care & honesty with agreeing R'14 allocations.

ASN.1:

RP-151841 ASN.1 freeze for Release 13 Samsung discussion Rel-13 -

Proposal 1: RAN decides to keep the current ASN.1 freeze schedule.
Proposal 2: RAN decides WIs to be put into the ASN.1 review process based on the RAN2 assessment.

conclusion: noted

RP-151867 Way forward on the completion of ASN.1 related to the Public Safety TTA discussion Rel-13 -
proposed: that RAN approve the ASN.1 review schedule for WIs, which was functionally frozen at RAN2#92 including ProSe Enhancement and Single-Cell Point-to-Multipoint transmission, according to the current Release 13 time schedule.
discussion: RAN chair: no new RAN2 WIs will be approved this week and RAN2 will have an additional ASN.1 review ad hoc so we are on track so far
Orange: items which are considered completed and items which are not yet completed, what will be in the ASN.1 review?
RAN2 chair: all completed WIs plus 2 other WIs: WLAN WI and MTC, indoor positioning has no impact on LTE RRC
Vodafone: NB-IOT is for completion in March 15
RAN chair: we said NB-IOT will be handled separately when CRs are ready
RAN2 chair: yes, NB-IOT will not be in the review for March so can only be reviewed via CRs for June 16
Vodafone: maybe we do not need to wait until May to review it
conclusion: noted

8.2.3 Approval of CRs to REL-8 WIs and WIs of previous releases

RP-152046 RAN2 agreed CRs on REL-8 Work Items RAN2 CR Pack Rel-8 LTE-L23, TEI10, TEI11, TEI12
conclusion: approved

8.2.4 Approval of CRs to Rel-9 WIs

RP-152047 RAN2 agreed CRs on Clarification for physical channel combination of DC-HSUPA and MC-HSDPA RAN2 CR Pack Rel-9 RANimp-DC_HSUPA, TEI10, 4C_HSDPA-Core, 8C_HSDPA-Core
conclusion: approved

8.2.5 Approval of CRs to Rel-10 WIs

RP-152048 RAN2 agreed CRs on various REL-10 Work Items RAN2 CR Pack Rel-10 TEI10, LTE_CA-Core, NIMTC-RAN_overload, TEI12, LTE_CA_TDD_FDD-Core
discussion: MCC: see company CR RP-152112 replacing R2-157101 and company CR RP-152113 replacing R2-157102
conclusion: all CRs of RP-152048 approved except:
- R2-157101 (revised in RP-142112) and
- R2-157102 (revised in RP-142113)

RP-152112 Enabling multiple NS and P-Max operation per cellNTT DOCOMO CR 36.331 1922 4 A Rel-11 TEI10
company CR; replacing agreed R2-157101 of RP-152048
discusssion: RAN2 chair: CR corrects inconsistencies found in cat.A CR with the cat.F CR
conclusion: approved

RP-152113 Enabling multiple NS and P-Max operation per cellNTT DOCOMO CR 36.331 1923 4 A Rel-12 TEI10
company CR; replacing agreed R2-157102 of RP-152048
discusssion: RAN2 chair: CR corrects inconsistencies found in cat.A CR with the cat.F CR
conclusion: approved

RP-152049 RAN2 agreed CRs on Alternative new maximum transport block sizes for DL 64QAM and 256QAM in TM9/10 RAN2 CR Pack Rel-10 LTE_eDL_MIMO-Core, COMP_LTE_DL-Core, TEI12
linked RAN1 36.213 CR R1-157527 in RP-152038 (see AI 10.5).
conclusion: approved

8.2.6 Approval of CRs to Rel-11 WIs

RP-152050 RAN2 agreed CRs on various REL-11 Work Items RAN2 CR Pack Rel-11 SPIA_IDC_LTE-Core, HSDPA_MFTX-Core, TEI12
conclusion: approved

8.2.7 Approval of linked CR packages led by RAN WG2

No contributions

8.3 TSG RAN WG3

8.3.1 Report from RAN WG3 including report on actions required from the previous meeting

RP-151636 Status Report RAN WG3 RAN3 chairman (Huawei) report
discussion: NEC: slide 8 seems to imply that extension is needed for RSE but this is not needed
RAN chair: we will discuss this under the RSE agenda item
Telecom Italia: dedicated session for new radio interface?
RAN chair: we will discuss this on Tue
AT&T: slide 26: @91?
RAN3 chair: meeting #91
conclusion: noted

RP-151637 List of CRs from RAN WG3 ETSI MCC discussion
conclusion: noted

8.3.2 Discussions on decisions from RAN WG3

No contributions

8.3.3 Approval of CRs to REL-8 WIs and WIs of previous releases

No contributions

8.3.4 Approval of CRs to Rel-9 WIs

No contributions

8.3.5 Approval of CRs to Rel-10 WIs

No contributions

8.3.6 Approval of CRs to Rel-11 WIs

No contributions

8.3.7 Approval of linked CR packages led by RAN WG3

No contributions

8.4 TSG RAN WG4

8.4.1 Report from RAN WG4 including report on actions required from the previous meeting

RP-151638 Status Report RAN WG4 RAN4 chairman (Nokia Networks) report
discussion: Intel: can we also agree ad hoc for eMTC and MIMO OTA it was already agreed in RAN4
RAN4 chair (Samsung): including eMTC topic into NB-IOT ad hoc was already agreed, we can discuss the inclusion of MIMO OTA further this week
Orange: 3 days NB-IOT and now additional 2 days MIMO-OTA ad hoc, it would help a lot to co-locate these ad hocs in the same country
RAN4 chair (Nokia Netw.): organizers tried but it is not yet clear whether the ad hocs can take place at same location
NTT DOCOMO: putting eMTC and NB-IOT has some synergy, however MIMO OTA is a different topic
Huawei: first priority should be NB-IOT and not eMTC

RAN chair: we leave this to RAN4 leaders
Vodafone: going from ~100 CA WIs to about 8 CA baskets: recommendation to also have some information in the RAN4 chairman's report to increase visibility
RAN4 chair (Samsung): can do this but there will be also individual status reports for each basket WI including each combination
RAN chair:: maybe including a summary in the WG report will be useful
Panasonic: we may need 5 digit Tdoc numbers in the next year
conclusion: noted, RAN chairman thanked Tuomo for his excellent and hard work as RAN4 chair in the last 4 years

RP-151639 List of CRs from RAN WG4 ETSI MCC discussion
conclusion: noted

8.4.2 Discussions on decisions from RAN WG4

RP-151862 New CA WI approach NTT DOCOMO discussion Rel-14 -
RAN#69 decided that we go for a CA basket WI approach. In consideration of it, RAN4 discussed the concrete approach at both RAN4#76bis and RAN4#77. As a result, RAN4#77 approved the approach we will take. This contribution briefly shares what RAN4 agreed on a new CA WI approach called basket WI approach.
conclusion: noted

8.4.3 Approval of CRs to REL-8 WIs and WIs of previous releases

No contributions

8.4.4 Approval of CRs to Rel-9 WIs

RP-152130 RAN4 CRs to Rel-9 Wis RAN4 CR Pack Rel-9 MBMS_LTE
conclusion: approved

8.4.5 Approval of CRs to Rel-10 WIs

RP-152131 RAN4 CRs to Rel-10 Wis RAN4 CR Pack Rel-10 TEI10, LTE-CA-Core, LTE_TDD_2600_US-Core
conclusion: approved

8.4.6 Approval of CRs to Rel-11 WIs

RP-152132 RAN4 CRs to Rel-11 WIs RAN4 CR Pack Rel-11 LTE_Interf_Rej-Perf, LTE_CA_B7-Core, MB_MSR_RF-Perf, LTE_CA_enh-Core, LTE_CA_enh-Perf, LTE_Relay2-Core, LTE_Relay2-Perf MB_MSR_RF-Core, TEI11
conclusion: approved

8.4.7 Approval of linked CR packages led by RAN WG4

No contributions

8.5 TSG RAN WG5

8.5.1 Report from RAN WG5 including report on actions required from the previous meeting

RP-151641 Status Report RAN WG5 RAN5 Chairman (Motorola Mobility) report
conclusion: noted

RP-151642 List of CRs from RAN WG5 ETSI MCC discussion
conclusion: noted

RP-151643 Status Report MCC TF160 (for approval) ETSI MCC TF160 Leader report
presented by RAN5 chairman
conclusion: approved

RP-151670 Terms of Reference (2016) of MCC TF160 ETSI MCC TF160 Leader ToR
conclusion: approved

8.5.2 Discussions on decisions from RAN WG5

No contributions

8.5.3 Approval of CRs to closed WIs of REL-10 (incl. TEI10_Test) and previous releases

RP-151681 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel 99 Conformance Testing(TEI_Test) RAN5 CR Pack Rel-99 TEI_Test
conclusion: approved

RP-151682 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-5 Conformance Testing(TEI5_Test) RAN5 CR Pack Rel-6 TEI5_Test
conclusion: approved

RP-151683 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-7 Conformance Testing(TEI7_Test) RAN5 CR Pack Rel-7 TEI7_Test
conclusion: approved

RP-151684 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-8 Conformance Testing(TEI8_Test) (Batch 1) RAN5 CR Pack Rel-8 TEI8_Test
conclusion: approved

RP-151685 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-8 Conformance Testing(TEI8_Test) (Batch 2) RAN5 CR Pack Rel-8 TEI8_Test
conclusion: approved
Note: R5-155795 of this CR pack has a wrong revision number on the CR cover, correct is CR 3149 rev 1.

RP-151686 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-8 Conformance Testing(TEI8_Test) (Batch 3) RAN5 CR Pack Rel-8 TEI8_Test
conclusion: withdrawn

RP-151687 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-9 Conformance Testing(TEI9_Test) RAN5 CR Pack Rel-9 TEI9_Test
conclusion: approved

RP-151688 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-10 Conformance Testing (TEI10_Test) (Batch 1) RAN5 CR Pack Rel-10 TEI10_Test
conclusion: approved

RP-151689 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-10 Conformance Testing (TEI10_Test) (Batch 2) RAN5 CR Pack Rel-10 TEI10_Test
conclusion: approved
Note: R5-155745 is actually CR2346a rev - (since a different CR2346 exists for the same spec in R5-156031 in RP-151700)

8.5.4 Approval of CRs to closed WIs of REL-11 (incl. TEI11_Test)

RP-151692 CR to 34.229-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.229-3 (prose), Annex A RAN5 CR Pack 34.229-3 0359 - F Rel-11 TEI8_Test
conclusion: approved

RP-151693 CRs to 34.229-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.229-3 (prose), Annex A RAN5 CR Pack 34.229-3 - - F/B Rel-11 TEI8_Test, TEI9_Test
conclusion: approved

RP-151696 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-11 Conformance Testing (TEI11_Test) RAN5 CR Pack Rel-11 TEI11_Test
conclusion: approved

8.5.5 Approval of linked CR packages led by RAN WG5

No contributions

9 Conformance Testing Work Items

9.1 Closed REL-12 work items

Note: For closed WIs of earlier releases see AI 8.5.

RP-151690 CR to 34.123-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.123-3 (prose), Annex A RAN5 CR Pack 34.123-3 3467 - F Rel-12 TEI8_Test
conclusion: approved

RP-151691 CRs to 34.123-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.123-3 (prose), Annex A RAN5 CR Pack 34.123-3 - - F/B Rel-12 TEI7_Test, TEI8_Test, TEI9_Test, TEI10_Test
conclusion: approved

RP-151694 CR to 36.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 36.523-3 (prose), Annex A RAN5 CR Pack 36.523-3 3017 - F Rel-12 TEI8_Test
conclusion: approved

RP-151695 CRs to 36.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 36.523-3 (prose), Annex A RAN5 CR Pack 36.523-3 - - F/B Rel-12 LTE_CA_Rel12_2UL-UEConTest, TEI8_Test, TEI9_Test, TEI10_Test, TEI11_Test
conclusion: approved

RP-151697 CR to 37.751-4: Add new verified and e-mail agreed TTCN test cases in the TC lists in 37.571-4 (prose), Annex A RAN5 CR Pack 37.571-4 0072 - F Rel-12 TEI9_Test
conclusion: approved

RP-151698 CRs to 37.571-4: Add new verified and e-mail agreed TTCN test cases in the TC lists in 37.571-4 (prose), Annex A RAN5 CR Pack 37.571-4 - - F/B Rel-12 TEI8_Test, TEI9_Test
conclusion: approved

9.2 Open Rel-7 work items

9.2.1 UE Conformance Test Aspects - Multimedia Telephony Services for IMS (MTSI) over fixed access [**New WI**: MTSI_FIXED_ACCESS-UEConTest]

RP-151677 Status report for WI Conformance Test Aspects - Multimedia Telephony Services for IMS (MTSI) over fixed access; rapporteur: Telecom Italia RAN5 WI status report Rel-7 MTSI_FIXED_ACCESS-UEConTest
conclusion: noted, approved: 5%, Dec.16

9.2.2 UE Conformance Test Aspects – Multimedia Telephony Services for IMS (MTSI) over WLAN [**New WI**: MTSI_WLAN-UEConTest]

RP-151769 Status report for WI UE Conformance Test Aspects -Multimedia Telephony Services for IMS (MTSI) over WLAN; rapporteur: Ericsson RAN5 WI status report Rel-7 MTSI_WLAN-UEConTest
conclusion: noted, approved: 5%, Dec.16

RP-151699 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects – Multimedia Telephony Services for IMS (MTSI) over WLAN (MTSI_WLAN-UEConTest) RAN5 CR Pack Rel-7 MTSI_WLAN-UEConTest
conclusion: approved

RP-151770 Revision of WI UE Conformance Test Aspects -Multimedia Telephony Services for IMS (MTSI) over WLAN Ericsson WID revised RAN5 Rel-7 MTSI_WLAN-UEConTest
last approved WID: RP-151334
conclusion: approved

9.3 Open Rel-11 work items

9.3.1 UE Conformance Test Aspects for UE Over the Air (Antenna) conformance testing methodology – Laptop Mounted Equipment Free Space Test [UEAnt_FSTest-UEConTest]

RP-151673 Status report for WI: UE Conformance Test Aspects for UE Over the Air (Antenna) conformance testing methodology – Laptop Equipment Free Space Test; rapporteur: ZTE RAN5 WI status report Rel-11 UEAnt_FSTest-UEConTest
conclusion: noted, approved: 95%, June 16

9.4 Open Rel-12 work items

9.4.1 UE Conformance Test Aspects – Further Rel-12 Configurations for LTE Advanced Carrier Aggregation with 3DL [LTE_CA_Rel12_3DL-UEConTest]

RP-151820 Status report for WI: UE Conformance Test Aspects - Further Rel-12 Configurations for LTE Advanced Carrier Aggregation with 3DL, rapporteur: Huawei RAN5 WI status report Rel-12 LTE_CA_Rel12_3DL-UEConTest
discussion: MCC: target date change
conclusion: noted, approved: 90%, March 16

RP-151700 RAN5 agreed non TTCN CR(s) under WI UE Conformance Test Aspects – Further Rel-12 Configurations for LTE Advanced Carrier Aggregation with 3DL (LTE_CA_Rel12_3DL-UEConTest) RAN5 CR Pack Rel-12 LTE_CA_Rel12_3DL-UEConTest
conclusion: approved

RP-151821 Revision of WI: UE Conformance Test Aspects – Further Rel-12 configurations for LTE Advanced Carrier Aggregation with 3DL Huawei WID revised RAN5 Rel-12 LTE_CA_Rel12_3DL-UEConTest
last approved WID: RP-150594; affected spec and completion date are updated to March 2016;
endorsed in R5-155797;
conclusion: approved

9.4.2 UE Conformance Test Aspects – WLAN/3GPP Radio Interworking [UTRA_LTE_WLAN_interw-UEConTest]

RP-151717 Status report of WI UE Conformance Test Aspects – WLAN/3GPP Radio Interworking; rapporteur: Intel RAN5 WI status report Rel-12 UTRA_LTE_WLAN_interw-UEConTest
discussion: MCC: target date change
conclusion: noted, approved: 90%, March 16

RP-151701 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - WLAN/3GPP Radio Interworking (UTRA_LTE_WLAN_interw-UEConTest) RAN5 CR Pack Rel-12 UTRA_LTE_WLAN_interw-UEConTest
conclusion: approved

9.4.3 UE Conformance Test Aspects - DCH Enhancements for UMTS [UTRA_DCHenh-UEConTest]

RP-151837 Status report of WI UE Conformance Test Aspects - DCH Enhancements for UMTS; rapporteur: Qualcomm RAN5 WI status report Rel-12 UTRA_DCHenh-UEConTest
conclusion: noted, approved: 65%, June 16

RP-151702 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - DCH Enhancements for UMTS (UTRA_DCHenh-UEConTest) RAN5 CR Pack Rel-12 UTRA_DCHenh-UEConTest
conclusion: approved

9.4.4 UE Conformance Test Aspects - L-band for Supplemental Downlink in E-UTRA and UTRA [LTE_UTRA_SDL_BandL-UEConTest]

RP-151771 Status report for WI Conference Test Aspects – L-band for Supplemental Downlink in E-UTRA and UTRA (band 32/XXXII); rapporteur: Ericsson RAN5 WI status report Rel-12 LTE_UTRA_SDL_BandL-UEConTest
conclusion: noted, approved: 100%, Dec.15; WI completed

RP-151772 TR 36.905 v2.0.0 on LTE Derivation of test points for Radio Transmission and Reception conformance test cases; for 1-step approval Ericsson draft TR 36.905 RAN5 Rel-12 LTE_UTRA_SDL_BandL-UEConTest
RAN5 TR 36.905 submitted for 1-step approval
conclusion: TR 36.905 is approved as v12.0.0

9.4.5 UE Conformance Test Aspects - Codec for Enhanced Voice Services (EVS)
[EVS_codec-UEConTest]

RP-151773 Status report for WI UE Conformance Test Aspects - Codec for Enhanced Voice Services (EVS); rapporteur: Ericsson RAN5 WI status report Rel-12 EVS_codec-UEConTest
discussion: MCC: target date change
conclusion: noted, approved: 95%, March 16

RP-151703 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Codec for Enhanced Voice Services (EVS) (EVS_codec-UEConTest) RAN5 CR Pack Rel-12 EVS_codec-UEConTest
conclusion: approved

9.4.6 UE Conformance Test Aspects - Further DL MIMO Enhancement for LTE-Advanced
[LTE_eDL_MIMO_enh-UEConTest]

RP-151675 Status report for WI: UE Conformance Test Aspects – Further DL MIMO Enhancement for LTE-Advanced; rapporteur: ZTE RAN5 WI status report Rel-12 LTE_eDL_MIMO_enh-Perf
conclusion: noted, approved: 75%, March 16

RP-151704 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Further DL MIMO Enhancement for LTE-Advanced (LTE_eDL_MIMO_enh-UEConTest) RAN5 CR Pack Rel-12 LTE_eDL_MIMO_enh-UEConTest
conclusion: approved

9.4.7 UE Conformance Test Aspects – LTE Device-to-Device Proximity Services
[LTE_D2D_Prox-UEConTest]

RP-151840 Status report of WI UE Conformance Test Aspects – Device-to-Device Proximity Services; rapporteur: Qualcomm RAN5 WI status report Rel-12 LTE_D2D_Prox-UEConTest
conclusion: noted, approved: 45%, June 16

RP-151705 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects – UE Conformance Test Aspects – LTE Device-to-Device Proximity Services (LTE_D2D_PROX-UEConTest) RAN5 CR Pack Rel-12 LTE_D2D_Prox-UEConTest
conclusion: approved

RP-151848 Revised WID: UE Conformance Test Aspects – LTE Device to Device Proximity Services Qualcomm Incorporated WID revised RAN5 Rel-12 LTE_D2D_Prox-UEConTest
conclusion: withdrawn, see RP-151849 instead

RP-151849 Revised WID: UE Conformance Test Aspects – LTE Device to Device Proximity Services Qualcomm Incorporated WID revised RAN5 Rel-12 LTE_D2D_Prox-UEConTest
last approved WID: RP-150131
conclusion: approved

9.4.8 UE Conformance Test Aspects - Low cost & enhanced coverage MTC UE for LTE
[LC_MTC_LTE-UEConTest]

RP-151774 Status report for WI UE Conformance Test Aspects - Low cost & enhanced coverage MTC UE for LTE; rapporteur: Ericsson RAN5 WI status report Rel-12 LC_MTC_LTE-UEConTest
discussion: MCC: target date change
conclusion: noted, approved: 70%, March 16

RP-151706 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Low cost & enhanced coverage MTC UE for LTE (LC_MTC_LTE-UEConTest) RAN5 CR Pack Rel-12 LC_MTC_LTE-UEConTest
conclusion: approved

9.4.9 UE Conformance Test Aspects - Further Rel-12 configurations for LTE Advanced Carrier Aggregation with 2UL [LTE_CA_Rel12_2UL-UEConTest]

RP-151775 Status report for WI UE Conformance Test Aspects - Further Rel-12 configurations for LTE Advanced Carrier Aggregation with 2UL; rapporteur: Ericsson RAN5 WI status report Rel-12 LTE_CA_Rel12_2UL-UEConTest
discussion: MCC: target date change
conclusion: noted, approved: 70%, March 16

RP-151707 RAN5 agreed non TTCN CR(s) under WI UE Conformance Test Aspects – Further Rel-12 configurations for LTE Advanced Carrier Aggregation with 2UL (LTE_CA_Rel12_2UL-UEConTest) RAN5 CR Pack Rel-12 LTE_CA_Rel12_2UL-UEConTest
conclusion: approved

RP-151776 Revision of WI UE Conformance Test Aspects - Further Rel-12 configurations for LTE Advanced Carrier Aggregation with 2UL Ericsson WID revised RAN5 Rel-12 LTE_CA_Rel12_2UL-UEConTest
last approved WID: RP-150136
conclusion: approved

9.4.10 UE Conformance Test Aspects - Performance Requirements of Interference Cancellation and Suppression Receiver for SU-MIMO for E-UTRA [LTE_SUMIMO_RX-UEConTest]

RP-151818 Status report for WI: UE Conformance Test Aspects - Performance Requirements of Interference Cancellation and Suppression Receiver for SU-MIMO for E-UTRA, rapporteur: Huawei RAN5 WI status report Rel-12 LTE_SUMIMO_RX-UEConTest
discussion: MCC: WI is completed 3 months earlier
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-151708 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Performance Requirements of Interference Cancellation and Suppression Receiver for SU-MIMO for E-UTRA (LTE_SUMIMO_RX-UEConTest)RAN5 CR Pack Rel-12 LTE_SUMIMO_RX-UEConTest
conclusion: approved

RP-151819 Revision of WI: UE Conformance Test Aspects – Performance Requirements of Interference Cancellation and Suppression Receiver for SU-MIMO for E-UTRA Huawei WID revised RAN5 Rel-12 LTE_SUMIMO_RX-UEConTest
last approved WID: RP-151463; affected spec and completion date are updated; endorsed in R5-155796
conclusion: approved

9.4.11 UE Conformance Test Aspects - E-UTRA Small cell enhancements - Physical layer aspects [LTE_SC_enh_L1-UEConTest]

RP-151822 Status report for WI: UE Conformance Test Aspects - E-UTRA small cell enhancements - Physical layer aspects, rapporteur: Huawei RAN5 WI status report Rel-12 LTE_SC_enh_L1-UEConTest
conclusion: noted, approved: 40%, Dec.16

RP-151709 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - E-UTRA Small cell enhancements - Physical layer aspects (LTE_SC_enh_L1-UEConTest) RAN5 CR Pack Rel-12 LTE_SC_enh_L1-UEConTest
conclusion: approved

9.4.12 UE Conformance Test Aspects - Dual connectivity for LTE [LTE_SC_enh_dualC-UEConTest]

RP-151777 Status report for WI UE Conformance Test Aspects - Dual connectivity for LTE; rapporteur: Ericsson RAN5 WI status report Rel-12 LTE_SC_enh_dualC-UEConTest
discussion: MCC: target date change
conclusion: noted, approved: 15%, June 16

RP-151710 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Dual connectivity for LTE (LTE_SC_enh_dualC-UEConTest) RAN5 CR Pack Rel-12 LTE_SC_enh_dualC-UEConTest
conclusion: approved

9.4.13 UE Conformance Test Aspects - UE Power Consumptions Optimizations (UEPCOP) [**New WI:** MTCe-UEPCOP-UEConTest]

RP-151778 Status report for WI UE Conformance Test Aspects – UE Power Consumptions Optimizations (UEPCOP); rapporteur: Ericsson RAN5 WI status report Rel-12 MTCe-UEPCOP-UEConTest
conclusion: noted, approved: 25%, March 16

RP-151711 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - UE Power Consumptions Optimizations (UEPCOP) (MTCe-UEPCOP-UEConTest) RAN5 CR Pack Rel-12 MTCe-UEPCOP-UEConTest
conclusion: approved

9.4.14 UE Conformance Test Aspects: Network-Assisted Interference Cancellation and Suppression for LTE [**New WI:** LTE_NAICS-UEConTest]

RP-151918 Status report for WI UE Conformance Test Aspects - Network-Assisted Interference Cancellation and Suppression for LTE; rapporteur: MediaTek RAN5 WI status report Rel-12 LTE_NAICS-UEConTest
conclusion: noted, approved: 35%, June 16

RP-151712 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects: Network-Assisted Interference Cancellation and Suppression for LTE (LTE_NAICS-UEConTest) RAN5 CR Pack Rel-12 LTE_NAICS-UEConTest
conclusion: approved

RP-151945 Revised Work Item Description: UE Conformance Test Aspects - Network-Assisted Interference Cancellation and Suppression for LTE MediaTek Inc. WID revised RAN5 Rel-12 LTE_NAICS-UEConTest
last approved WID: RP-151298
discussion: RAN chair: TR changed, suppporters added
conclusion: approved

9.4.15 UE Conformance Test Aspects - Further Enhancements to LTE TDD for DL-UL Interference Management and Traffic Adaptation [**New WI:** LTE_TDD_eIMTA-UEConTest]

RP-151834 Status Report for WI: UE Conformance Test Aspects - Further Enhancements to LTE TDD for DL-UL Interference Management and Traffic Adaptation RAN5 WI status report Rel-12 LTE_TDD_eIMTA-UEConTest
conclusion: noted, approved: 5%, March 17

9.4.16 Conformance Test Aspects: Small Technical Enhancements and Improvements for Rel-12 [TEI12_Test]

RP-151713 RAN5 agreed non TTCN CR(s) under WI Small Technical Enhancements and Improvements for Rel-12 Conformance Testing (TEI12_Test) RAN5 CR Pack Rel-12 TEI12_Test
conclusion: approved

9.5 Open Rel-13 work items

9.5.1 UE Conformance Test Aspects - LTE UE TRP and TRS and UTRA Hand Phantom [LTE_UTRA_TRP_TRS-UEConTest]

RP-151674 Status report for WI: UE Conformance Test Aspects - LTE UE TRP and TRS and UTRA Hand Phantom; rapporteur: ZTE RAN5 WI status report Rel-13 LTE_UTRA_TRP_TRS-UEConTest

conclusion: noted, approved: 75%, June 16

9.5.2 UE Conformance Test Aspects - Core Requirements for Uplink 64QAM for E-UTRA [LTE_UL64QAM-UEConTest]

RP-151759 Status report for WI: UE Conformance Test Aspects - Core Requirements for Uplink 64QAM for E-UTRA; rapporteur: China Mobile Com. Corporation RAN5 WI status report Rel-13 LTE_UL64QAM-UEConTest
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-151714 RAN5 agreed non TTCN CR(s) WI UE Conformance Test Aspects - Core Requirements for Uplink 64QAM for E-UTRA (LTE_UL64QAM-UEConTest) RAN5 CR Pack Rel-13 LTE_UL64QAM-UEConTest
conclusion: approved
Note: RP-151714 does not include the RAN5 agreed CR R5-156188 (CR2154 rev 2) but its previous version R5-156072 (CR2154 rev 1). The difference between R5-156072 (which was for REL-12) and R5-156188 (which is for REL-13 but based on REL-12 spec) is just the REL on the CR cover.
But the CR implementation and the CR database used R5-156188, i.e. the changes were introduced in REL-13 of of 36.521-1 as requested by the RAN5.

9.5.3 Conformance Test Aspects: Small Technical Enhancements and Improvements for Rel-13 [TEI13_Test]

No contributions

10 Work Items with target Rel-12 (not related to conformance testing)

10.1 Closed UTRA only related WIs

RAN2:

RP-152051 RAN2 agreed CRs on closed REL-12 UTRA related Work Items RAN2 CR Pack Rel-12 EDCH_enh-Core, UTRA_SIBenh-Core
conclusion: approved

10.2 Closed UTRA & LTE related WIs

RAN2:

RP-152052 RAN2 agreed CRs on Corrections to WLAN/3GPP radio interworking RAN2 CR Pack 25.331 Rel-12 UTRA_LTE_WLAN_interw-Core
conclusion: approved

10.3 Closed LTE only related WIs

RAN1:

RP-152036 CRs to modify max TA for dual connectivity RAN1 CR Pack Rel-12 LTE_SC_enh_dualC-Core
conclusion: approved

RP-152037 CRs to 36.213 for corrections on eIMTA RAN1 CR Pack Rel-12 LTE_TDD_eIMTA-Core
conclusion: approved

RAN2:

RP-152053 RAN2 agreed CRs on closed REL-12 LTE related Work Items RAN2 CR Pack Rel-12 HetNet_eMOB_LTE-Core, LTE_CA_TDD_FDD-Core, LTE_SC_enh_dualC-Core, LTE_SC_enh_L1-Core, LTE_D2D_Prox-Core, SCM_LTE-Core, LTE_NAICS-Core
conclusion: approved
Note: R2-157178 has the wrong CR number CR1313r1 on the CR cover, the correct CR number is CR0313r1.

RP-152054 RAN2 endorsed CR on Support of 256QAM for UE categories 6, 7, 9 and 10 RAN2 CR Pack 36.306 0302 2 F Rel-12 TEI12, LTE_SC_enh_L1-Core
discussion: MCC: unacceptable CR cover sheet, technically correct but no consensus on the motivation; company CR in RP-151830 to replace RP-152054
discussion: RAN chair: will come back on this with UE capability discussion
conclusion: revised in RP-151830

RP-151830 Support of 256QAM for UE categories 6,7,9 and 10 Intel Corporation CR 36.306 0302 3 C Rel-12 TEI12, LTE_SC_enh_L1-Core
company CR; replacing endorsed R2-157116 in RP-152054 which had a CR cover sheet problem
conclusion: not pursued

RAN4:

RP-152133 RAN4 CRs to Rel-12 Closed LTE only related Wis RAN4 CR Pack Rel-12 LC_MTC_LTE-Core, LC_MTC_LTE-Perf, LTE_CA_2UL-A1-Core, LTE_CA_2UL-A4-Core, LTE_CA_B1_B3_B40-Perf, LTE_CA_B1_B3_B5-Perf, LTE_CA_B1_B3-Perf, LTE_CA_B1_B41_B41-Perf, LTE_CA_B1_B42_B42-Perf, LTE_CA_B1_B8_B40-Perf, LTE_CA_B18_B28-Core, LTE_CA_B21_B42_B42-Perf, LTE_CA_B3_B40_B40-Perf, LTE_CA_B3_B42_B42-Perf, LTE_CA_B39_B39_B41-Perf, LTE_CA_B39_B41_B41-Perf, LTE_CA_B39_B41-Core, LTE_CA_B4_B4_B5-Core, LTE_CA_B7_B40_B40-Perf, LTE_CA_B8_B41_B41-Perf, LTE_CA_B8_B42_B42-Perf, LTE_CA_Mult-Perf, LTE_CA_NC_B41_3DL, LTE_CA_TDD_FDD-Perf, LTE_D2D_Prox-Core, LTE_eDL_MIMO_enh-Perf, LTE_NAICS, LTE_SC_enh_dualC-Core, LTE_SC_enh_dualC-Perf, LTE_SC_enh_L1-Perf

conclusion: approved

10.4 Open LTE only related WIs (non-spectrum related)

10.4.1 Perf. part: LTE Device to Device Proximity Services [LTE_D2D_Prox-Perf]

Core part completed in March 15

RP-151797 Status report for WI Perf Part: LTE Device to Device Proximity Services; rapporteur: Qualcomm RAN4 WI status report Rel-12 LTE_D2D_Prox-Perf
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152135 RAN4 CRs to LTE Device to Device Proximity Services - Perf Part RAN4 CR Pack Rel-12 LTE_D2D_Prox-Perf
conclusion: approved

10.5 Small Technical Enhancements and Improvements for Rel-12 [TEI12]

RAN1:

RP-152038 CRs for Rel-12 corrections (RI bit widths, TM9/10) RAN1 CR Pack Rel-12 TEI12
CR R1-157527 is linked to CRs in RP-152049 (see AI 8.2.5)
conclusion: approved

RAN2:

RP-152055 RAN2 agreed CRs on Small Technical Enhancements and Improvements for Rel-12 RAN2 CR Pack Rel-12 TEI12
conclusion: approved

establishment cause:

RP-152056 RAN2 endorsed CR on Addition of establishment cause for mobile-originating VoLTE calls and network indication in SIB2 RAN2 CR Pack 36.331 1931 2 C Rel-12 TEI12
discusssion: MCC: No consensus for two alternatives RP-152056 & RP-152057 so RAN decision needed
RAN2 chair: concern was that legacy Node B may have problems with extra cause value; Nokia Networks achieved a way forward
Nokia Networks: is in RP-152225
conclusion: approved

RP-152057 RAN2 endorsed CR on Addition of establishment cause for mobile-originating VoLTE calls without network indication in SIB2 RAN2 CR Pack 36.331 1989 - C Rel-12 TEI12
discussion: MCC: No consensus for two alternatives RP-152056 & RP-152057 so RAN decision needed; see also related company CR in RP-152174
conclusion: not pursued

RP-151929 Handling of Unknown Establishment Cause NTT DOCOMO discussion Rel-12 TEI12
moved from AI 8.2.2 to AI 10.5
Observation 1: The common understanding is that the NW will not reject a request with unknown establishment cause.
Observation 2: The common understanding taken in RAN#51 is not completely understood by all the NW vendors, due e.g., to lack of specification.
Proposal 1: To agree on specifying a general guidance and clarification for the eNB behaviour receiving unknown Establishment Cause
Proposal 2: To agree the RAN2 endorsed CR without SIB + CR on clarification of eNB behaviour receiving uknown Establishment Cause
conclusion: noted

RP-151936 CR on unknown Establishment Cause handling NTT DOCOMO CR 36.331 1999 - F Rel-12 TEI12

company CR; coming on top of endorsed R2-157182 in RP-152057; no cat.A REL-13 CR since there is not yet a 36.331 REL-13; revised in RP-152174 as RP-151936 has no CR number; compare R2-111704 in RP-110285; moved from AI 8.2.2 to AI 10.5
conclusion: revised in RP-152174 as RP-151936 has no CR number

RP-152174 CR on unknown Establishment Cause handling NTT DOCOMO CR 36.331 1999 1 F Rel-12 TEI12
moved from AI 8.2.2 to AI 10.5
conclusion: not pursued

RP-151859 Way forward on new Establishment Cause for VoLTE calls KDDI Corporation discussion Rel-12 TEI12
moved from AI 8.2.2 to AI 10.5;
conclusion: revised in RP-152120

RP-152120 Way forward on new Establishment Cause for VoLTE calls KDDI Corporation discussion Rel-12 TEI12
conclusion: noted

RP-151966 Way forward with new establishment cause for MMTEL voice Nokia Networks discussion Rel-12 TEI12
Discussion on way forward for technically endorsed CRs from RAN2
conclusion: noted

RP-152225 Way forward on VoLTE call establishment cause Nokia Networks discussion Rel-12 TEI12
related to technically endorsed RAN2 CR RP-152056
proposals:
1. Approve the RAN2 technical endorsed CR, RP-152056 (R2-157133).
- I.e. introduce a new establishment cause for MMTEL Voice and network indication in SIB2.
2. Specify a general guidance and clarification for the eNB behaviour receiving unknown establishment cause.
- Ask RAN2 to work on this (including the release from which to introduce the clarification) and provide a CR for RAN#71.

discussion: Deutsche Telekom: why putting burden on UE instead of upgrading network? We have serious concerns about this approach and this shall not be used as an excuse for similar approaches in the future
Vodafone:supports the way forward
KDDI: does not understand reason for new cause and does not want it but could accept it if it the only way to solve it
conclusion: noted, way forward is endorsed

RP-152275 Draft LS on introduction of new establishment cause for mobile-originating calls (to: RAN2, CT1, RAN3; cc: SA2; contact: Nokia Networks) Nokia Networks LSout Rel-12 TEI12
related to way forward RP-152225
conclusion: revised in RP-152295 to provide final version

RP-152295 LS on introduction of new establishment cause for mobile-originating calls (to: RAN2, CT1, RAN3; cc: SA2; contact: Nokia Networks) RAN LSout Rel-12 TEI12
conclusion: approved

RAN3:

RP-152085 RAN3 CRs for TEI12 RAN3 CR Pack Rel-12 TEI12
conclusion: approved

RAN4:

RP-152136 Small Technical Enhancements and Improvements for Rel-12 RAN4 CR Pack Rel-13 TEI12
conclusion: approved

11 Work Items with target Rel-13 (not related to conformance testing)

11.1 Closed UTRA only related WIs

11.1.1 Multiflow Enhancements for UTRA [HSDPA_MFTX_enh-Core]

RP-152029 CR to clarify definitions and CQI reporting in Multiflow 3F-4C configuration RAN1 CR Pack 25.214 0741 1 F Rel-13 HSDPA_MFTX_enh-Core
conclusion: approved

11.2 Closed UTRA & LTE related WIs

11.2.1 Core part: SON for AAS-based deployments [UTRA_LTE_SON_AAS-Core]

No contributions

11.3 Closed LTE only related WIs (non-spectrum related)

11.3.1 Core part: Enhanced Signalling for Inter-eNB Coordinated Multi-Point (CoMP) for LTE [COMP_LTE_IeNB_sig-Core]

RP-152086 RAN3 CRs for Enhanced Signalling for Inter-eNB Coordinated Multi-Point (CoMP) for LTE RAN3 CR Pack Rel-13 COMP_LTE_IeNB_sig-Core
conclusion: approved

11.3.2 Core part: UE core requirements for uplink 64 QAM [LTE_UL64QAM-Core]

RP-152137 UE core requirements for uplink 64 QAM RAN4 CR Pack Rel-13 LTE_UL64QAM-Core
conclusion: approved

11.4 Closed LTE only related WIs (spectrum related)

11.4.1 Inter-band CA related WIs (2DL/1UL)

RP-151912 TR 36.852-13 v1.0.0, LTE Advanced inter-band Carrier Aggregation (2DL/1UL); Release 13; presented for information Ericsson draft TR 36.852-13 RAN4 Rel-13 LTE_CA_B3_B38-Core
RAN4 TR 36.852-13 is submitted for information;
conclusion: at first intended to be revised in RP-152193 to align with drafting rules;
later it was decided to postpone the revision and to note RP-151912
noted

RP-152193 TR 36.852-13 v1.0.1, LTE Advanced inter-band Carrier Aggregation (2DL/1UL); Release 13; presented for information Ericsson draft TR 36.852-13 RAN4 Rel-13 LTE_CA_B3_B38-Core
RAN4 TR 36.852-13 is submitted for information
conclusion: withdrawn

11.4.1.1 Additional bandwidth combination set for LTE Advanced inter-band Carrier Aggregation of Band 2 and Band 12 [LTE_CA_B2_B12_BWset]

No contributions

11.4.1.2 LTE Advanced inter-band Carrier Aggregation of Band 2 and Band 28 [LTE_CA_B2_B28]

No contributions

11.4.1.3 Additional bandwidth combination set for LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 5 [LTE_CA_B3_B5_BWset]

No contributions

11.4.1.4 LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 31 [LTE_CA_B3_B31]

No contributions

11.4.1.5 LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 38 [LTE_CA_B3_B38]

No contributions

11.4.1.6 LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 40 [LTE_CA_B3_B40]

No contributions

11.4.1.7 Additional bandwidth combination set 2 for LTE Advanced inter-band Carrier Aggregation of Band 4 and Band 12 [LTE_CA_B4_B12_BWset2]

No contributions

11.4.1.8 LTE Advanced inter-band Carrier Aggregation of Band 4 and Band 28 [LTE_CA_B4_B28]

No contributions

11.4.1.9 Additional bandwidth combination set for LTE Advanced inter-band Carrier Aggregation of Band 5 and Band 7 [LTE_CA_B5_B7_BWset]

No contributions

11.4.1.10 LTE Advanced inter-band Carrier Aggregation of Band 5 and Band 40 [LTE_CA_B5_B40]

No contributions

11.4.1.11 LTE Advanced inter-band Carrier Aggregation of Band 7 and Band 22 [LTE_CA_B7_B22]

No contributions

11.4.1.12 LTE Advanced inter-band Carrier Aggregation of Band 20 and Band 31 [LTE_CA_B20_B31]

No contributions

11.4.1.13 LTE Advanced inter-band Carrier Aggregation of Band 25 and Band 26 [LTE_CA_B25_B26]

No contributions

11.4.2 3 Band Carrier Aggregation (3DL/1UL)

11.4.2.1 LTE Advanced 3 band CA (3DL/1UL) of Band 1, Band 3 and Band 3 [LTE_CA_B1_B3_B3]

No contributions

11.4.2.2 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 3 and Band 28 [LTE_CA_B1_B3_B28]

No contributions

11.4.2.3 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 3 and Band 42 [LTE_CA_B1_B3_B42]

No contributions

11.4.2.4 LTE Advanced 3 Band Carrier Aggregation (3DL/1UL) of Band 1, Band 7 and Band 28 [LTE_CA_B1_B7_B28]

No contributions

No contributions

11.4.2.5 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 8 and Band 11 [LTE_CA_B1_B8_B11]

No contributions

11.4.2.6 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 19 and Band 28 [LTE_CA_B1_B19_B28]

No contributions

11.4.2.7 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 19 and Band 42 [LTE_CA_B1_B19_B42]

No contributions

11.4.2.8 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 21 and Band 42 [LTE_CA_B1_B21_B42]

No contributions

11.4.2.9 LTE Advanced 3 Band CA (3DL/1UL) of Band 2, Band 2 and Band 12 [LTE_CA_B2_B2_B12]

No contributions

11.4.2.10 LTE Advanced 3 Band CA (3DL/1UL) of Band 2, Band 5, and Band 29 [LTE_CA_B2_B5_B29]

No contributions

11.4.2.11 LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 3 and Band 5 [LTE_CA_B3_B3_B5]

No contributions

11.4.2.12 LTE Advanced 3 Band CA (3DL/1UL) for Band 3, Band 3 and Band 8 [LTE_CA_B3_B3_B8]

No contributions

11.4.2.13 Additional bandwidth combination set for LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 7 and Band 7 [LTE_CA_B3_B7_B7_BWset]

No contributions

11.4.2.14 LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 7 and Band 8 [LTE_CA_B3_B7_B8]

No contributions

11.4.2.15 LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 7 and Band 28 [LTE_CA_B3_B7_B28]

No contributions

11.4.2.16 LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 19 and Band 42 [LTE_CA_B3_B19_B42]

No contributions

11.4.2.17 LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 40 and Band 40 [LTE_CA_B3_B40_B40-Core]

No contributions

11.4.2.18 LTE Advanced 3 Band CA (3DL/1UL) of Band 7, Band 7 and Band 28 [LTE_CA_B7_B7_B28]

No contributions

11.4.2.19 LTE Advanced 3 Band CA (3DL/1UL) of Band 7, Band 40 and Band 40 [LTE_CA_B7_B40_B40]

No contributions

11.4.2.20 LTE Advanced 3 Band CA (3DL/1UL) of Band 8, Band 41 and Band 41 [LTE_CA_B8_B41_B41]

RP-152138 LTE Advanced 3 Band (3DL/1UL) of Band 8, Band 41 and Band 41 RAN4 CR Pack Rel-13 LTE_CA_B8_B41_B41-Core
conclusion: approved

11.4.2.21 LTE Advanced 3 Band CA (3DL/1UL) of Band 19, Band 21 and Band 42 [LTE_CA_B19_B21_B42]

No contributions

11.4.2.22 LTE Advanced 3 Band CA (3DL/1UL) for Band 20, Band 42 and Band 42 [LTE_CA_B20_B42_B42]

No contributions

11.4.2.23 LTE Advanced 3 Band CA (3DL/1UL) of Band 21, Band 42 and Band 42 [LTE_CA_B21_B42_B42]

No contributions

11.4.2.24 LTE Advanced 3 Band CA (3DL/1UL) of Band 38, Band 40 and Band 40 [LTE_CA_B38_B40_B40]

No contributions

11.4.2.25 LTE Advanced 3 Band CA (3DL/1UL) of Band 41, Band 42 and Band 42 [LTE_CA_B41_B42_B42]

No contributions

11.4.3 Intra-band CA related WIs (non-contiguous 2DL)

11.4.3.1 Additional bandwidth combination set for LTE Advanced intra-band non-contiguous Carrier Aggregation in Band 4 [LTE_CA_NC_B4_BWset]

11.4.4 Intra-band CA related WIs (contiguous 3DL)

11.4.4.1 LTE Advanced intra-band contiguous Carrier Aggregation in Band 42 for 3DL [LTE_CA_C_B42_3DL]

RP-152139 LTE Advanced intra-band contiguous Carrier Aggregation in Band 42 for 3DL RAN4 CR Pack Rel-13 LTE_CA_C_B42_3DL-Core
conclusion: approved

11.4.5 Intra-band CA related WIs (non-contiguous 3DL)

11.4.5.1 LTE Advanced intra-band non-contiguous Carrier Aggregation in Band 42 for 3DL [LTE_CA_NC_B42_3DL]

No contributions

11.5 Open UTRA related WIs (spectrum & non-spectrum related)

RP-152140 Open UTRA related WIs RAN4 CR Pack Rel-13 HSUPA_DB_MC-Core, DC_HSUPA_CS-Core
compare AI 11.5.1 and AI 11.5.9
conclusion: approved

11.5.1 HSPA Dual-Band UL carrier aggregation [HSUPA_DB_MC]

RP-151844 Status report of WI HSPA Dual-Band UL carrier aggregation; rapporteur: Qualcomm RAN4 WI status report Rel-13 HSUPA_DB_MC
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 90%, March16; Core part WI is completed

RP-152030 Introduction of HSPA Dual-Band UL carrier aggregation RAN1 CR Pack 25.213 0121 1 B Rel-13 HSUPA_DB_MC-Core
conclusion: approved

RP-152058 RAN2 agreed CRs on Introduction of DB-DC-HSUPA RAN2 CR Pack Rel-13 HSUPA_DB_MC-Core
conclusion: approved

RP-152087 RAN3 CRs for Introduction of Dual-Band Dual-Cell HSUPA Carrier Aggregation RAN3 CR Pack Rel-13 HSUPA_DB_MC-Core
conclusion: approved

RP-152141 HSPA Dual-Band UL carrier aggregation RAN4 CR Pack Rel-13 HSUPA_DB_MC-Core
note: For 25.101 CR see RP-152140
conclusion: approved

RP-151852 Revised WID - HSPA Dual-Band UL carrier aggregation; rapporteur: Qualcomm Qualcomm Incorporated WID revised RAN4 Rel-13 HSUPA_DB_MC
last approved WID: RP-150129
conclusion: approved

11.5.2 Core part: Support of EVS over UTRAN CS [EVSoCS_UTRAN-Core]

RP-151842 Status report of WI Core part: Support of EVS over UTRAN CS; rapporteur: Qualcomm RAN2 WI status report Rel-13 EVSoCS_UTRAN-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152059 RAN2 agreed CR on Introduction of EVS CS RABs RAN2 CR Pack 25.993 0119 1 B Rel-13 EVSoCS_UTRAN-Core
conclusion: approved

11.5.3 Core part: RAN aspects for improvements to CS/PS coordination in UTRAN Shared Network [CSPS_Coord-UTRA-Core]

RP-151995 Status report of WI Core part: RAN aspects for improvements to CS/PS coordination in UTRAN Shared Network; rapporteur: Ericsson RAN3 WI status report Rel-13 CSPS_Coord-UTRA-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152088 RAN3 CRs for Introduction of improvements to CS/PS coordination in UTRAN Shared Network RAN3 CR Pack Rel-13 CSPS_Coord-UTRA-Core
conclusion: approved

11.5.4 Downlink TPC Enhancements for UMTS [UTRA_EDL_TPC]

RP-151802 Status report for WI: Downlink TPC enhancements for UMTS, rapporteur: Huawei RAN1 WI status report Rel-13 UTRA_EDL_TPC
discussion: MCC: WI exception request in RP-151803
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 90%, March16; Core part WI is completed

RP-151803 Work item exception forDownlink TPC enhancements for UMTS - core part Huawei WI exception request RAN1 Rel-13 UTRA_EDL_TPC-Core
need for an exception depends on RAN2 email discussion
discussion: RAN2 chair: RAN2 email discussion concluded
conclusion: withdrawn

RP-152039 Introduction of downlink TPC enhancements for UMTS RAN1 CR Pack 25.214 0743 1 B Rel-13 UTRA_EDL_TPC
discussion: MCC: WI exception request
conclusion: approved

RP-152060 RAN2 agreed CRs on the introduction of Downlink TPC enhancements for UMTS RAN2 CR Pack Rel-13 UTRA_EDL_TPC-Core
discussion: MCC: WI exception request
conclusion: approved

RP-152089 RAN3 CRs for Introduction of TPC enhancements RAN3 CR Pack Rel-13 UTRA_EDL_TPC-Core
discussion: MCC: WI exception request
conclusion: approved

RP-152142 Downlink TPC Enhancements for UMTS RAN4 CR Pack Rel-13 UTRA_EDL_TPC-Perf

discussion: MCC: WI exception request
conclusion: approved

RP-151880 Revision of WI: Downlink TPC enhancements for UMTS, rapporteur: Huawei Huawei, HiSilicon WID revised RAN1 Rel-13 UTRA_EDL_TPC
last approved WID: RP-151044; addition of UID
conclusion: approved

11.5.5 Core part: L2/L3 Downlink enhancements for UMTS [UTRA_EDL_L23-Core]

RP-151805 Status report for WI: Core part: L2/L3 Downlink enhancements for UMTS, rapporteur: Huawei RAN2 WI status report Rel-13 UTRA_EDL_L23-Core
conclusion: noted, approved: 100%, Dec.15; WI completed

RAN2:

RP-152061 RAN2 agreed CRs on the introduction of L2/L3 Downlink enhancements for UMTS RAN2 CR Pack Rel-13 UTRA_EDL_L23-Core
conclusion: approved

RP-151825 Introduction of L2 and L3 Downlink enhancements for UMTS in TS 25.300 Huawei, HiSilicon, Nokia Networks CR 25.300 0034 - B Rel-13 UTRA_EDL_L23-Core
company CR; finally not needed as endorsed CR is provided in R2-156999 in RP-152062 to RAN #70 via MCC
conclusion: withdrawn

RP-151826 Introduction of L2 and L3 Downlink enhancements for UMTS in TS 25.331 Huawei, HiSilicon, Nokia Networks CR 25.331 5825 - B Rel-13 UTRA_EDL_L23-Core
company CR; finally not needed as endorsed CR is provided in R2-156998 in RP-152062 to RAN #70 via MCC
conclusion: withdrawn

RP-152062 RAN2 endorsed CRs on Introduction of enhanced state transition RAN2 CR Pack Rel-13 UTRA_EDL_L23-Core
discussion: MCC: One company has a concern to agree so RAN decision needed; alternative to R2-156998 of RP-152062 in RP-151992
conclusion: approved

RP-151988 Introduction of Autonomous State Transition BlackBerry UK Limited discussion 25.331 Rel-13 UTRA_EDL_L23-Core
Discussion related to company CR for Autonomous State Transition as alternative to 25.331 CR5812 rev1, WI Code UTRA_EDL_L23-Core
Proposal: RAN#70 approved the enhanced retrievable configuration proposal captured in RP-151992 as the solution for implementation of the autonomous state transition feature.
discussion: RAN chair: support for the way forward?
conclusion: noted

RP-151992 Introduction of Autonomous State Transmission BlackBerry UK Limited CR 25.331 5821 2 B Rel-13 UTRA_EDL_L23-Core
company contribution; revision of R2-156869 which was not treated in RAN2 #92; alternative to RAN2 endorsed R2-156998 of RP-152062
conclusion: withdrawn

RAN3:

RP-152090 RAN3 CRs for L2/L3 Downlink enhancements for UMTS RAN3 CR Pack Rel-13 UTRA_EDL_L23-Core
conclusion: approved

WID:

RP-152184 Revised WID: Core part: L2/L3 Downlink enhancements for UMTS Huawei WID revised RAN2 Rel-13 UTRA_EDL_L23-Core
last approved WID: RP-151249; reducing the scope to complete WI by RAN #70
discussion: Huawei: one objective was removed

conclusion: approved

11.5.6 Core part: RAN sharing enhancements for UMTS [RSE_UTRA_GUSH-Core]

RP-151806 Status report for WI: Core part: RAN sharing enhancements for UMTS, rapporteur: Huawei RAN3 WI status report Rel-13 RSE_UTRA_GUSH-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152091 RAN3 CRs for RAN sharing enhancements for UMTS RAN3 CR Pack Rel-13 RSE_UTRA_GUSH-Core
conclusion: approved

11.5.7 Core part: Power saving enhancements for UMTS [UTRA_SDATA_POWSAV-Core]

RP-151997 Status report of WI Core part: Power Saving Enhancements for UMTS; rapporteur: Ericsson RAN2 WI status report Rel-13 UTRA_SDATA_POWSAV-Core
conclusion: noted, approved: 100%, Dec.15; Core part WI is completed

RP-152063 RAN2 agreed CRs on Introduction of extended DRX in Idle mode RAN2 CR Pack Rel-13 UTRA_SDATA_POWSAV-Core
conclusion: approved

RP-152094 RAN3 CR for Introduction of Power Saving enhancements for UMTS RAN3 CR Pack 25.413 1304 3 B Rel-13 UTRA_SDATA_POWSAV-Core
moved from AI 11.5.9 to AI 11.5.7
conclusion: approved

RP-152143 Power saving enhancements for UMTS - Core Part RAN4 CR Pack Rel-13 UTRA_SDATA_POWSAV-Core
conclusion: approved

RP-151998 Revision of WI Power Saving Enhancements for UMTS Ericsson WID revised RAN2 Rel-13 UTRA_SDATA_POWSAV-Core
last approved WID: RP-151292; note: This revised WID introduces a new Perf. part WI for UTRA only (led by RAN4): UTRA_SDATA_POWSAV-Perf
conclusion: approved; **NEW Perf. part WI is introduced**

11.5.8 Core part: Network-Assisted Interference Cancellation and Suppression for UMTS
[**New WI**: UTRA_NAICS-Core]

RP-151801 Status report for WI: Core part: Network-Assisted Interference Cancellation and Suppression for UMTS, rapporteur: Huawei RAN1 WI status report Rel-13 UTRA_NAICS-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152064 RAN2 agreed CR on Introduction of NAICS for UMTS RAN2 CR Pack 25.300 0032 - B Rel-13 UTRA_NAICS-Core
conclusion: approved

RP-152092 RAN3 CRs for Introduction of NAICS RAN3 CR Pack Rel-13 UTRA_NAICS-Core
moved from AI 11.5.7 to AI 11.5.8
conclusion: approved

RP-151879 Revision of WI: Network-Assisted Interference Cancellation and Suppression for UMTS, rapporteur: Huawei Huawei, HiSilicon WID revised RAN1 Rel-13 UTRA_NAICS-Core
last approved WID: RP-151577; addition of UID
conclusion: approved

11.5.9 Core part: Dual Carrier HSUPA Enhancements for UTRAN CS
[**New WI**: DC_HSUPA_CS-Core]

RP-151779 Status report of WI: Core part: Dual Carrier HSUPA Enhancements for UTRAN CS; rapporteur: Nokia Networks RAN2 WI status report Rel-13 DC_HSUPA_CS-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152023 CRs to 25.211 & 25.213 introducing Dual Carrier HSUPA enhancements for UTRAN CS RAN1 CR Pack Rel-13 DC_HSUPA_CS-Core
conclusion: approved

RP-152065 RAN2 agreed CRs on Introduction of Dual Carrier HSUPA enhancements for UTRAN CS RAN2 CR Pack Rel-13 DC_HSUPA_CS-Core
conclusion: approved

RP-152093 RAN3 CRs for Introduction of Dual Carrier/Dual Band HSUPA operation with DPDCH channel feature RAN3 CR Pack Rel-13 DC_HSUPA_CS-Core moved from AI 11.5.8 to AI 11.5.9
conclusion: approved

RP-152144 Dual Carrier HSUPA Enhancements for UTRAN CS - Core part RAN4 CR Pack Rel-13 DC_HSUPA_CS-Core note: For 25.101 CR see RP-152140
conclusion: approved

RP-151780 Revision of WI: Core part: Dual Carrier HSUPA Enhancements for UTRAN CS Nokia Networks WID revised RAN2 Rel-13 DC_HSUPA_CS-Core
last approved WID: RP-151607
conclusion: approved

11.6 Open UTRA & LTE related WIs (non-spectrum related)

11.6.1 Core part: LTE UE TRP & TRS and UTRA Hand Phantom related UE TRP and TRS Requirements [LTE_UTRA_TRP_TRS-Core] (WI was shifted from REL-12 to REL-13)

RP-151913 Status report of WI Core part: LTE UE TRP & TRS and UTRA Hand Phantom related UE TRP and TRS Requirements; rapporteur: Nokia Networks RAN4 WI status report Rel-13 LTE_UTRA_TRP_TRS-Core
discussion: Sony: there is a proposed WI extension by a quarter (RP-151915)
MCC: WI exception request
conclusion: noted, approved: 50%, March 16

RP-151915 Work item exception for LTE UE TRP & TRS and UTRA Hand Phantom related UE TRP and TRS Requirements Nokia Networks WI exception request RAN4 Rel-13 LTE_UTRA_TRP_TRS-Core
discussion: Sony: WI was going on for 3 years, is 50% complete, exception sheet is extending for 3 months; suggests to stop it now
Vodafone: really stopping it or we need more time?
Sony: we should
Orange: proposal from operators and proposal from vendors and no consensus; there is an input from GSMA and we could consider 3 months to solve this
Vodafone: we discussed this input already so this will not change it
RAN chair: we will verify this at RAN #71 and grant a 3 months exception
conclusion: approved

RP-151917 Revised WID: LTE UE TRP and TRS and UTRA Hand Phantom related UE TRP and TRS Requirements Nokia Networks WID revised RAN4 Rel-13 LTE_UTRA_TRP_TRS-Core
last approved WID: RP-141966; to extend completion with one RAN cycle; MCC: 50% complete and no progress in last quarter, realistic?
conclusion: approved?

11.6.2 Base Station (BS) RF requirements for Active Antenna System (AAS) [AAS_BS_LTE_UTRA] (WIs were shifted from REL-12 to REL-13)

RP-151809 Status report for WI: Base Station (BS) RF requirements for Active Antenna System (AAS), rapporteur: Huawei RAN4 WI status report Rel-13 AAS_BS_LTE_UTRA
discussion: MCC: WI exception request
conclusion: noted, approved:Core: 98%, March 16; Perf.: 20%, June 16

RP-151810 Exception request for WI: Base Station (BS) RF requirements for Active Antenna System (AAS), rapporteur: HuaweiHuawei WI exception request RAN4 Rel-13 AAS_BS_LTE_UTRA-Core

conclusion: approved

RP-151811 Revision of WI: Station (BS) RF requirements for Active Antenna System (AAS), rapporteur: Huawei Huawei WID revised RAN4 Rel-13 AAS_BS_LTE_UTRA last approved WID: RP-142235; revised to add EMC aspects;
conclusion: revised in RP-152119

RP-152119 Revision of WI: Station (BS) RF requirements for Active Antenna System (AAS), rapporteur: Huawei Huawei WID revised RAN4 Rel-13 AAS_BS_LTE_UTRA
last approved WID: RP-142235; revised to add EMC aspects;
conclusion: approved

11.6.3 Core part: Radiated requirements for the verification of multi-antenna reception performance of UEs [UTRA_LTE_MIMO_OTA-Core]

RP-151656 LS on Announcing the Publication of GSMA TS.24 V.3.0 – Operator Acceptance Values for Device Antenna Performance
(GSMA_TSG_AP_147_LS; to: RAN, RAN4, RAN5, GCF - Steering Group, CAG, PAG, PTCRB, CTIA, EU-TCAM, EU Radio Spectrum Committee, ETSI MSG, ETSI ERM, Digital Europe, MMF, ANEC; cc: GSMA PSMC, GSMA Networks Group , GSMA Device Security Group, GSMA N2020; contact: Orange) GSMA TSG AP
LS inRel-13 LTE_UTRA_TRP_TRS-Core, UTRA_LTE_MIMO_OTA-Core
RAN action requested
conclusion: noted, no LS answer

RP-151667 LS regarding the CTIA MIMO OTA Test Plan Roadmap
(CTIA_LS_151110; to: RAN4, RAN5; cc: RAN; contact: CTIA MOSG Co-Chair (Verizon)) CTIA MIMO OTA Sub-Group
LS in Rel-13 LTE_UTRA_TRP_TRS-Core, UTRA_LTE_MIMO_OTA-Core
CTIA = Cellular Telecommunications & Internet Association; no RAN action requested
presented by Spirent Communications
conclusion: noted, no LS answer

RP-151869 Status report of WI Core Part: Radiated requirements for the verification of multi-antenna reception performance of UEs; rapporteur: Intel Corporation RAN4 WI status report Rel-13 UTRA_LTE_MIMO_OTA-Core
conclusion: revised in RP-152216

RP-152216 Status report of WI Core Part: Radiated requirements for the verification of multi-antenna reception performance of UEs; rapporteur: Intel Corporation RAN4 WI status report Rel-13 UTRA_LTE_MIMO_OTA-Core
discussion: MCC: late submission, WI exception request
Intel: time budget updated
conclusion: noted, approved: 30%,, March 16

RP-151870 Work item exception for Core Part: Radiated requirements for the verification of multi-antenna reception performance of Ues Intel Corporation WI exception request RAN4 Rel-13 UTRA_LTE_MIMO_OTA-Core
discussion: RAN4 chair (Samsung): there will be a MIMO OTA ad hoc on 18-19.01.2016, location still under discussion
conclusion: approved

RP-152045 MIMO OTA Work Item Considerations CTTC, Bluetest discussion Rel-13 UTRA_LTE_MIMO_OTA-Core
related to WI exception request in RP-151870
conclusion: noted

RP-151878 Revised WID: Radiated requirements for the verification of multi-antenna reception performance of UEs; rapporteur: Intel Corporation Intel WID revised RAN4 Rel-13 UTRA_LTE_MIMO_OTA-Core
last approved WID: RP-151574; to update also time budget; MCC: time budget has to be corrected in status report not in revised WIDs
conclusion: approved

RP-152145 Radiated requirements for the verification of multi-antenna reception performance of Ues - Core Part RAN4 CR Pack Rel-13 UTRA_LTE_MIMO_OTA-Core
discussion: MCC: WI exception request
conclusion: approved

11.6.4 Core part: RAN aspects of Application specific Congestion control for Data Communication [ACDC-RAN-Core]

RP-151944 Status Report for WI: Core part: Application specific Congestion control for Data Communication; rapporteur: LG Electronics RAN2 WI status report Rel-13 ACDC-RAN-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152066 RAN2 agreed CRs on Introduction of Application specific Congestion control for Data Communication (ACDC) in UTRAN and LTE RAN2 CR Pack Rel-13 ACDC-RAN-Core
conclusion: approved

RP-152095 RAN3 CR for System Information Update to support the new SIBs introduced in ACDC RAN3 CR Pack 25.433 2070 1 B Rel-13 ACDC-RAN-Core
conclusion: approved

11.6.5 Core part: Dedicated Core Networks [DECOR-UTRA_LTE-Core]

RP-151996 Status report of WI Core part: Dedicated Core Networks; rapporteur: Ericsson RAN3 WI status report Rel-13 DECOR-UTRA_LTE-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-152067 RAN2 agreed CR on Introduction of Dedicated Core Network (DECOR) feature RAN2 CR Pack 36.300 0779 5 B Rel-13 DECOR-UTRA_LTE-Core
conclusion: approved

RP-152096 RAN3 CRs for Introduction of DÉCOR feature RAN3 CR Pack Rel-13 DECOR-UTRA_LTE-Core
conclusion: approved

11.6.6 Indoor Positioning enhancements for UTRA and LTE [**New WI**: UTRA_LTE_iPos_enh]

LSs:

RP-151648 LS Response to R2-154793 on Indoor Positioning impacts to 29.171 (C4-151875; to: RAN2; cc: RAN; contact: NextNav) CT4 LS in Rel-13 UTRA_LTE_iPos_enh-Core
R2-154793 was only sent to CT4 and not to/cc RAN; no RAN action requested
conclusion: noted, no LS answer from RAN

RP-151651 LS regarding new WI proposal: Indoor Positioning Enhancements for UTRA and LTE (ATC_LS_20150923; to: RAN4; cc: RAN; contact: American Tower Corporation VP Compliance) American Tower Corporation LS in Rel-13 UTRA_LTE_iPos_enh-Core
no RAN action requested
conclusion: noted, no LS answer from RAN

RP-151652 LS regarding new WI proposal: Indoor Positioning Enhancements for UTRA and LTE (CC_LS_20150925; to: RAN4; cc: RAN; contact: Crown Castle Sales Director)Crown Castle LS in Rel-13 UTRA_LTE_iPos_enh-Core
no RAN action requested
conclusion: noted, no LS answer from RAN

RP-151653 LS regarding new WI proposal: Indoor Positioning Enhancements for UTRA and LTE (SBA_LS_20150929; to: RAN4; cc: RAN; contact: SBA Communications Corporation VP) SBS Communications Corporation LS in Rel-13 UTRA_LTE_iPos_enh-Core
no RAN action requested
conclusion: noted, no LS answer from RAN

RP-152127 LS on indoor positioning (FCC_LS151202; to: RAN; cc: -; contact: Chief Public Safety and Homeland Security Bureau) FCC LS in Rel-13 UTRA_LTE_iPos_enh-Core
no explicit RAN action requested

discussion: RAN chair: there will be an indoor positioning WI in REL-14 which will not take part in the prioritization with other REL-14 WIs
conclusion: noted, no LS answer from RAN

Status report:

RP-151831 Status report for WI: Indoor Positioning enh. for UTRA and LTE, rapporteur: NextNav RAN2 WI status report Rel-13 UTRA_LTE_iPos_enh
discussion: Ericsson: The completion level of core part of the WI is proposed to be 100%. However core WI objectives are not completed in WGs. Therefore core WI completion level cannot be 100%.
NextNav: the intention is to move the RAN dependent portion to REL-14 as there was no consensus about this in Anaheim
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 10%, June 16; Core part WI completed

RP-152229 Way Forward on Indoor Positioning Qualcomm, Ericsson, Nokia Networks, TruePosition, Sprint discussion Rel-13 UTRA_LTE_iPos_enh
proposed way forward:
Incorporate WiFi, BT, Barometric in Rel-13
- *Both LTE & UMTS*
- *Requires revision of agreed CRs for:*
  36.305 (R2-157059), 36.355 (R2-157125)
  25.305 (R2-156942), 25.331 (R2-156943), 25.413 (R3-152856), 25.453 (R3-152920)
- *Addresses the vertical component which was identified as the missing feature from the beginning & supports dispatchable UE location*

Move all other components to Rel-14 since they are not complete
- *They can be incorporated when the work is complete*

discussion: NextNav: there were a number of LSs indicating that co-existance is not an issue and the RAN4 part on MBS was completed
Ericsson: does not agree with that view, asks the former RAN4 chair (Nokia Networks) for clarification
RAN4 chair (Nokia Networks): co-existence issues were discussed and some requirements were captured (co-signed by Ericsson) but Ericsson asked at last RAN4 meeting for new requirements and spec, this would require modification of the WID, so work acc. to current WID was done
Ericsson: this was about the SI TR, there is no normative requirement, contributions for this from Anaheim
Broadcom: same view as NextNav, this was covered
NextNav: co-existence was addressed in TR 37.857
Qualcomm: if this objective was just for adding something in a SI TR than there would have been no need to add this to the WID
Intel: supports NextNav view
AT&T: we are supporting this WI, we have invested in this technology and we are happy with the level of coexistance work that was done; if some companies have a problem they can bring up the concrete problem
US Dep.ofC.: supports AT&T, if there is really something to be addressed then this can be addressed in REL-14
RAN chair: what about this proposal?
Qualcomm: there is no RAN4 document saying that co-existence was addressed
NextNav: 3GPP does not put requirements on non-3GPP technologies and we asked a certified lab to verify and we are 10dB better
Ericsson: for other technologies there are standardizations bodies with which we can communicate if there is a problem asking them to protect 3GPP technology, this is not the case with MBS
NextNav: each operator can specify how to protect their bands for co-locations
AT&T: we need a decision at RAN #70
RAN chair: discuss offline to find a way forward and we will come back (either on Tue or Wed)
conclusion: noted

revised WID:

RP-152008 Revised work item proposal: Indoor Positioning enhancements for UTRA and LTE NextNav WID revised RAN2 Rel-13 UTRA_LTE_iPos_enh

last approved WID: RP-151624
conclusion: revised in RP-152251

RP-152251 Revised work item proposal: Indoor Positioning enhancements for UTRA and LTE NextNav WID revised RAN2 Rel-13 UTRA_LTE_iPos_enh
last approved WID: RP-151624; revision of RP-152008
discussion: NextNav: one bullet was moved to REL-14
conclusion: approved

RAN2:

RP-152068 RAN2 agreed CRs on RAT-Independent positioning enhancements RAN2 CR Pack Rel-13 UTRA_LTE_iPos_enh-Core
discussion: MCC: company CR in RP-152109 to replace R2-156942
conclusion: all CRs approved except R2-156942; R2-156942 revised in RP-152109

RP-152109 RAT-Independent positioning enhancements NextNav CR 25.305 0125 3 B Rel-13 UTRA_LTE_iPos_enh-Core
company CR; CR is replacing RAN2 agreed CR R2-156942 of RP-152068 as additional changes were found necessary
conclusion: approved

RP-152017 RAT-Independent positioning enhancements NextNav CR 25.331 5824 - B Rel-13 UTRA_LTE_iPos_enh-Core
company CR; finally not needed; see agreed R2-156943 in RP-152068 instead
conclusion: withdrawn

RP-152110 RAT-Independent positioning enhancements NextNav CR 25.306 0497 - B Rel-13 UTRA_LTE_iPos_enh-Core
company CR; need for this CR was only detected after RAN2 in Nov.
conclusion: approved

RAN3:

RP-152097 RAN3 CRs for RAT-independent indoor positioning enhancements RAN3 CR Pack Rel-13 UTRA_LTE_iPos_enh-Core
MCC: 25.413 CR R3-152856 is linked to CT4 CR in CP-150766; note: company CR RP-152016 intends to replace R3-152856
conclusion: all CRs approved except R3-152856, R3-152856 revised in RP-152016

RP-152016 RAT-Independent positioning enhancements for RANAP NextNav CR 25.413 1307 4 B Rel-13 UTRA_LTE_iPos_enh-Core
company CR; replacing RAN3 agreed CR R3-152856 of RP-152097
conclusion: approved

RP-152018 RAT-Independent positioning enhancements NextNav CR 25.453 0158 - B Rel-13 UTRA_LTE_iPos_enh-Core
company CR; finally not needed; see agreed R3-152920 in RP-152097 instead
conclusion: withdrawn

11.7 Open LTE only related WIs (non-spectrum related)

11.7.1 Further LTE Physical Layer Enhancements for MTC [LTE_MTCe2_L1]

RP-151672 Status report of WI Further LTE Physical Layer Enhancements for MTC; rapporteur: Ericsson RAN1 WI status report Rel-13 LTE_MTCe2_L1
discussion: Telecom Italia: verify the completion level of the activity
Huawei: RRM perf. part has 2TU but Perf. should be reduced from 1 to 0.5
Ericsson: fine to reduce
conclusion: revised in RP-152259

RP-152259 Status report of WI Further LTE Physical Layer Enhancements for MTC; rapporteur: Ericsson RAN1 WI status report Rel-13 LTE_MTCe2_L1
revision of RP-151672 which was flagged by Telecom Italia; MCC: late submission
conclusion: noted, approved: Core: 90%, March 16; Perf. 10%, June 16

RP-151722 Work Item Exception for Further LTE Physical Layer Enhancements for MTC Ericsson WI exception request RAN1 Rel-13 LTE_MTCe2_L1-Core
conclusion: revised in RP-152217

RP-152217 Work Item Exception for Further LTE Physical Layer Enhancements for MTC Ericsson WI exception request RAN1 Rel-13 LTE_MTCe2_L1-Core
discussion: Telecom Italia: for which WGs?
Ericsson: RAN2/RAN3/RAN4
Telecom Italia: still some discussion ongoing in RAN1
RAN1 chair: suggests to check again on Wed
Huawei: UE cap. and UE cat. should be added for RAN2
RAN2 chair: we had a 36.306 CR, we can come back if there is a problem
Huawei: it is not about revisiting a topic, it was not addressed
Vodafone: architecture enhanccements from SA2 were supposed to be imperative, this is not reflected here
Ericsson: was not in the scope of this WI so can be considered later
conclusion: approved
Telecom Italia: does RAN1 need to be added to the exception sheet as CRs are not approved?
RAN1 vice-chair (ALU): work in RAN1 is 100% done so only really essential corrections will be allowed
RAN chair: so no need for a change of the exception request sheet

RP-151976 LTE UE category for Rel-13 eMTC Ericsson discussion Rel-13 LTE_MTCe2_L1-Core
conclusion: withdrawn

RP-152126 Introduction of further LTE Physical Layer Enhancements for MTC Motorola Mobility CR 36.213 0540 3 B Rel-13 LTE_MTCe2_L1-Core
company CR; revision of RAN1 endorsed R1-157818 which was supposed to be further revised in a RAN1 email discussion that finally did not conclude in time
conclusion: postponed

RP-152024 Introduction of Rel-13 eMTC feature to LTE RAN1specs RAN1 CR Pack Rel-13 LTE_MTCe2_L1-Core
MCC: late submission, WI exception request; Huawei: Since the eMTC WI is requesting an exception, the RAN1 eMTC CRs cannot be approved until eMTC CRs from all WGs are ready;
discussion: Huawei: as WI has an exception we do not need to approve the package
conclusion: postponed

RP-152069 RAN2 agreed CR on Introduction of low complexity UE and enhanced coverage features RAN2 CR Pack 36.300 0810 2 B Rel-13 LTE_MTCe2_L1-Core
discussion: MCC: WI exception request
Huawei: we should wait with the approval
MCC: stage 2 CR could be approved separately but where is the 36.306 CR
RAN2 chair: the 36.306 CR was stable in RAN2 (is a running CR)
Huawei: open issues have to be taken into account for time budget situation
conclusion: approved

11.7.2 Core part: RAN Aspects of RAN Sharing Enhancements for LTE [RSE-RAN_LTE-Core]

RP-151794 Status report for WI Core Part: RAN Aspects of RAN Sharing Enhancements for LTE; rapporteur: NEC RAN3 WI status report Rel-13 RSE-RAN_LTE-Core
discussion: MCC: WI exception request in RP-151828
conclusion: noted, approved: 100%, Dec.15; WI completed

RP-151827 Revision of WI RAN Aspects of RAN Sharing Enhancements for LTE NEC EUROPE LTD WID revised RAN3 Rel-13 RSE-RAN_LTE-Core
last approved WID: RP-141671; company CR RP-151955 to complete this WI; if the CR is approved, the WI can be closed; if the CR is not approved, RAN2 needs to discuss at the next meeting and the WI needs an exception.
conclusion: approved

RP-151828 Exception request for WI RAN Aspects of RAN Sharing Enhancements; Core part. NEC EUROPE LTD WI exception request RAN3 Rel-13 RSE-RAN_LTE-Core
A company CR will be provided to RAN#70; if it is approved, the WI can be closed. If it is not approved, RAN2 needs to discuss the issue and we need this exception.
conclusion: withdrawn

RP-151955 Introduction of data volume measurements in shared E-UTRAN TeliaSonera, NEC, Alcatel-Lucent CR 36.314 0035 - B Rel-13 RSE-RAN_LTE-Core
company CR; CR is needed to close REL-13 WI RSE-RAN_LTE-Core; RAN3 agreed a TP to RAN2 TS 36.314 sent in an LS (R3-152873) to RAN2; RP-151955 includes the TP and some more information from the LS; this CR was not presented to any WG but a draft was sent to RAN2 reflector for review
discussion: TeliaSonera: CR was provided via RAN2 reflector and no comments were raised there
Nokia Networks: sending email over the reflector does not mean reviewed
RAN3 chair: this is not a new topic this was known for 3 months
RAN2 chair: there was a Huawei comment was this taken into account? if not we can fix this later
conclusion: approved

RP-152070 RAN2 agreed CRs on Introduction of RAN Aspects of RAN Sharing Enhancements for LTE RAN2 CR Pack Rel-13 RSE-RAN_LTE-Core
discussion: MCC: WI exception request
conclusion: approved

RP-152098 RAN3 CR for Description of solutions for RRC rejections during Overload Start RAN3 CR Pack 36.8560001 1 B Rel-13 RSE-RAN_LTE-Core
discussion: MCC: WI exception request
conclusion: approved

11.7.3 LTE Carrier Aggregation Enhancement Beyond 5 Carriers [LTE_CA_enh_b5C]

RP-151938 Status report of WI LTE Carrier Aggregation Enhancement Beyond 5 Carriers; rapporteur: Nokia Networks RAN1 WI status report Rel-13 LTE_CA_enh_b5C
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 0%, June 16; Core part WI completed

RP-151984 Revised WID: LTE Carrier Aggregation Enhancement Beyond 5 Carriers Nokia Networks, NTT DoCoMo Inc. WID revised RAN1 Rel-13 LTE_CA_enh_b5C
last approved WID: RP-150771; a few missing affected specifications complemented/added - no other changes
conclusion: approved

RP-151957 36.300 CR for capturing B5C and PUCCH on SCell Nokia Networks, NTT DOCOMO, INC. CR 36.3000822 - B Rel-13 LTE_CA_enh_b5C-Core
company CR; CR was in principle agreed at RAN2 in Oct. in R2-154982 but then forgotten
conclusion: approved

RP-152027 Introduction of Rel-13 eCA feature to LTE RAN1 specs RAN1 CR Pack Rel-13 LTE_CA_enh_b5C-Core
conclusion: approved

RP-152071 RAN2 agreed CRs on Introduction of Carrier Aggregation enhancements beyond 5 CCs RAN2 CR Pack Rel-13 LTE_CA_enh_b5C-Core
conclusion: approved

RP-152099 RAN3 CRs for LTE Carrier Aggregation Enhancement Beyond 5 Carriers RAN3 CR Pack Rel-13 LTE_CA_enh_b5C-Core
conclusion: approved

RP-152149 LTE Carrier Aggregation Enhancement Beyond 5 Carriers RAN4 CR Pack Rel-13 LTE_CA_enh_b5C-Core
conclusion: approved

11.7.4 Enhanced LTE Device to Device Proximity Services [LTE_eD2D_Prox]

RP-151952 Status report for WI on Enhanced LTE Device to Device Proximity Services; rapporteur: Qualcomm RAN2 WI status report Rel-13 LTE_eD2D_Prox
discussion: MCC: WI exception request
conclusion: noted, approved: Core: 90%, March 16; Perf.: 0%, Sep.16

RP-151954 Work item exception for Enhanced LTE Device to Device Proximity Services – core part Qualcomm Incorporated WI exception request RAN2 Rel-13 LTE_eD2D_Prox-Core
discussion: Qualcomm: only Core part for RAN4 needs extension
conclusion: approved

RP-152033 Introduction of Rel-13 eD2D feature to LTE RAN1 specs RAN1 CR Pack Rel-13 LTE_eD2D_Prox-Core
conclusion: revised in RP-152125

RP-152125 Introduction of Rel-13 eD2D feature to LTE RAN1 specs RAN1 CR Pack Rel-13 LTE_eD2D_Prox-Core
discussion: MCC: WI exception request; also note: one CR got split into 2 files in RP-152125
conclusion: approved

RP-152072 RAN2 agreed CRs on Introduction of Enhanced LTE Device to Device Proximity Services RAN2 CR Pack Rel-13 LTE_eD2D_Prox-Core
discussion: MCC: WI exception request
MCC: normally all stage 3 CRs are approved together
RAN2 chair: prefers to approve the CR package to simplify ASN.1 review
conclusion: approved

RP-152100 RAN3 CRs for Enhanced LTE Device to Device Proximity Services RAN3 CR Pack Rel-13 LTE_eD2D_Prox-Core
discussion: MCC: WI exception request
conclusion: approved

RP-152150 Enhanced LTE Device to Device Proximity Services RAN4 CR Pack Rel-13 LTE_eD2D_Prox-Core
discussion: MCC: WI exception request
conclusion: approved

11.7.5 Perf. part: Performance requirements of MMSE-IRC receiver for LTE BS [LTE_MMSE_IRC_BS-Perf]

RP-151741 Status report for WI Perf. Part: Performance requirements of MMSE-IRC receiver for LTE BS, rapporteur: China Telecom RAN4 WI status report Rel-13 LTE_MMSE_IRC_BS-Perf
conclusion: noted, approved: 70%, June 16

11.7.6 Perf. part: CRS Interference Mitigation for LTE Homogenous Deployments [LTE_CRSIM-Perf]

RP-151718 Status report for WI: Perf. part: CRS Interference Mitigation for LTE Homogenous Deployments; rapporteur: Ericsson RAN4 WI status report Rel-13 LTE_CRSIM-Perf
conclusion: noted, approved: 80%, March 16

RP-152073 RAN2 agreed CR on Introducing CRS interference mitigation on Scell RAN2 CR Pack 36.331 1953 2 B Rel-13 LTE_CRSIM-Perf
conclusion: approved

RP-152151 CRS Interference Mitigation for LTE Homogenous Deployments - Perf RAN4 CR Pack Rel-13 LTE_CRSIM-Perf
conclusion: approved

11.7.7 Dual Connectivity enhancements for LTE [LTE_dualC_enh]

RP-151738 Status report for WI: Dual Connectivity enhancements for LTE; rapporteur: NTT DOCOMO, INC. RAN2 WI status report Rel-13 LTE_dualC_enh
conclusion: noted, approved: Core: 100%, Dec. 15; Perf.: 0%, Jun.16; Core part WI completed

RP-151739 Revised WID: Dual Connectivity enhancements for LTE NTT DOCOMO WID revised RAN2 Rel-13 LTE_dualC_enh
last approved WID: RP-150490; to update the affected spec and objective
conclusion: approved

RP-152032 Introduction of SSTD for dual connectivity enhancement RAN1 CR Pack 36.2140030 1 B Rel-13 LTE_dualC_enh-Core
conclusion: approved

RP-152074 RAN2 agreed CRs on Intdroduction of Dual Connectivity enhancements for LTE RAN2 CR Pack Rel-13 LTE_dualC_enh-Core
conclusion: approved

RP-152152 Dual Connectivity enhancements for LTE RAN4 CR Pack Rel-13 LTE_dualC_enh-Core
conclusion: approved

11.7.8 Multicarrier Load Distribution of UEs in LTE [LTE_MC_load]

RP-151676 Status Report of WI Multicarrier Load Distribution of UEs in LTE; rapporteur: ZTE Corporation RAN2 WI status report Rel-13 LTE_MC_load
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 70%, June 16; Core part WI completed

RP-152181 Revised WID: Multicarrier Load Distribution of UEs in LTE ZTE Corporation WID revised RAN2Rel-13 LTE_MC_load
last approved WID: RP-151206
conclusion: approved

RP-152035 Introduction of RS-SINR measurement for Multicarrier Load Distribution RAN1 CR Pack 36.214 0028 2 B Rel-13 LTE_MC_load-Core
conclusion: approved

RP-152075 RAN2 agreed CRs on Introduction of Multicarrier Load Distribution of UEs in LTE RAN2 CR Pack Rel-13 LTE_MC_load-Core
conclusion: approved

RP-152153 Multicarrier Load Distribution of UEs in LTE RAN4 CR Pack Rel-13 LTE_MC_load-Core
conclusion: approved

11.7.9 Core part: RAN enhancements for extended DRX in LTE [LTE_extDRX-Core]

RP-151950 Status report for WI on Core part: RAN enhancements for extended DRX in LTE; rapporteur: Qualcomm RAN2 WI status report Rel-13 LTE_extDRX-Core
discussion: MCC: WI exception request
conclusion: noted, approved: 95%, March 16

RP-151951 Work item exception for RAN enhancements for extended DRX in LTE Qualcomm Incorporated WI exception request RAN2 Rel-13 LTE_extDRX-Core
discussion: Qualcomm: RAN3 and RAN4 issues open
conclusion: approved

RP-152076 RAN2 agreed CRs on Introduction of RAN enhancements for extended DRX in LTE RAN2 CR Pack Rel-13 LTE_extDRX-Core
discussion: MCC: WI exception request
conclusion: approved

RP-152154 RAN enhancements for extended DRX in LTE - Core RAN4 CR Pack Rel-13 LTE_extDRX-Core
discussion: MCC: WI exception request
conclusion: approved

11.7.10 LTE-WLAN Radio Level Integration and Interworking Enhancement [LTE_WLAN_radio]

RP-151962 Status report of WI LTE-WLAN Radio Level Integration and Interworking Enhancement; rapporteur: Intel Corporation RAN2 WI status report Rel-13 LTE_WLAN_radio
discussion: MCC: target dates missing;
Broadcom: discussion regarding level of completion and remaining RAN2 actions
Broadcom: a number of aspects are not properly covered in the status report (e.g. LS, SA LS on co-existence)
Intel: not all optimisations could be addressed in RAN2 so exception sheet is covering only essential parts), also SA3 work can be completed in 1 quarter
Broadcom: metrics, policies, authorization still to be done
KT: supports Intel's proposal to exclude interworking in order to complete the WI in REL-13
RAN chair: we will not do downselection
RAN3 chair: time budget does not properly reflect time budget of RAN3, will be updated in WG summary
conclusion: noted, approved: Core: 75%, March16; Perf.: 10%, March 16

RP-151965 On LTE-WLAN Radio Level Integration and Interworking Enhancement progress Intel Corporation discussion Rel-13 LTE_WLAN_radio
conclusion: revised in RP-152214

RP-152214 On LTE-WLAN Radio Level Integration and Interworking Enhancement progress Intel Corporation, Qualcomm Incorporated, China Telecom, InterDigital Communications, Cisco Systems, MediaTek Inc., Sony, Ruckus, CATT discussion Rel-13 LTE_WLAN_radio
Proposal 1: Only LWA part of the LTE-WLAN Radio Level Integration and Interworking Enhancement WI is standardized in Rel-13.
discussion: Intel: this is a new proposal, WID/SR does not yet reflect this, current SR asked for TU increase
Ericsson: would keep the 2nd part in the WID and we need to increase
Deutsche Telekom: we were interested in interworking aspect
Huawei: originally 46 companies were supporting this WI, so this Tdoc is signed is just by a smaller portion, so just note the paper
Intel: that means we will need all remaining RAN2 capacity for this WI
conclusion: noted

RP-151963 Exception sheet for LTE-WLAN Radio Level Integration and Interworking Enhancement Intel Corporation WI exception request RAN2 Rel-13 LTE_WLAN_radio-Core
conclusion: approved

RP-151964 Revised WID: LTE-WLAN Radio Level Integration and Interworking Enhancement Intel Corporation WID revised RAN2 Rel-13 LTE_WLAN_radio
last approved WID: RP-151114,
conclusion: revised in RP-152213

RP-152213 Revised WID: LTE-WLAN Radio Level Integration and Interworking Enhancement Intel Corporation WID revised RAN2 Rel-13 LTE_WLAN_radio
last approved WID: RP-151114
conclusion: approved

RP-152077 RAN2 agreed CR on Introduction of LTE-WLAN Radio Level Integration and Interworking Enhancement stage-2 RAN2 CR Pack 36.300 0809 1 B Rel-13 LTE_WLAN_radio-Core
discussion: MCC: WI exception request
conclusion: approved

RP-152146 LTE-WLAN Radio Level Integration and Interworking Enhancement RAN4 CR Pack Rel-13 LTE_WLAN_radio-Perf
discussion: MCC: WI exception request
conclusion: approved

RP-151742 TS 36.461 v1.0.0 for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) and Wireless LAN (WLAN); Xw layer 1, for information China Telecommunications draft TS 36.461 RAN3 Rel-13 LTE_WLAN_radio-Core
RAN3 TS 36.461 is submitted for information
discussion: Intel: new RAN2 spec is not submitted
conclusion: noted

RP-151865 TS 36.462 v1.0.0 on E-UTRAN and Wireless LAN; Xw signalling transport China Mobile Com. Corporation draft TS 36.462 RAN3 Rel-13 LTE_WLAN_radio-Core
RAN3 TS 36.462 is submitted for information; TR title wrong in RP-151865: It should say "transport" instead of "support"
conclusion: noted

RP-151958 TS 36.463 v1.0.0 on Evolved Universal Terrestrial Radio Access Network (E-UTRAN) and Wireless LAN (WLAN); Xw application protocol (XwAP) Qualcomm Incorporated draft TS 36.463 RAN3 Rel-13 LTE_WLAN_radio-Core
RAN3 TS 36.463 submitted for information
conclusion: noted

RP-151985 TR 36.464 v1.0.0 on Evolved Universal Terrestrial Radio Access Network (E-UTRAN) and Wireless LAN (WLAN); Xw data transport Intel Corporation draft TS 36.464 RAN3 Rel-13 LTE_WLAN_radio-Core
RAN3 TS 36.464 submitted for information
conclusion: noted

RP-151986 TR 36.465 v1.0.0 on Evolved Universal Terrestrial Radio Access Network (E-UTRAN) and Wireless LAN (WLAN); Xw interface user plane protocol Intel Corporation draft TS 36.465 RAN3 Rel-13 LTE_WLAN_radio-Core
RAN3 TS 36.465 submitted for information
conclusion: noted

11.7.11 LTE DL 4 Rx antenna ports [LTE_4Rx_AP_DL]

RP-151768 Status Report for WI: LTE DL 4 Rx antenna ports, rapporteur: Ericsson RAN4 WI status report Rel-13 LTE_4Rx_AP_DL
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 60%, June 16; Core part WI completed

RP-151737 eNB Tx EVM for 4 Layer Transmissions Qualcomm Incorporated discussion Rel-13 LTE_4Rx_AP_DL
In this paper we discuss the need to enhance the eNB Tx EVM requirements for 4 layer transmissions with higher order modulation(64QAM ad 256QAM). We show with the current EVM requirements the feature has very limited use so new requirements are needed.
discussion: Qualcomm: TX requirements were not in the scope of this WI, either under this WI or under TEI?
KDDI: supports Qualcomm's proposal
Ericsson: TX EVM has nothing to do with the number of layers, so we do not agree; it means quite extensive work of ~1year if you want to address this but then this should be another SI
Mediatek: supports to have a SI
Qualcomm: does not think that system level simulations are needed
Ericsson: will take more than quarter
Qualcomm: we would like to change EVM for 64QAM and 256QAM
ALU: if we do this under TEI what will be the time unit impact?
RAN4 chair (Samsung): time budget for TEI is preallocated
conclusion: noted, contribution on this can be brought to RAN4 under TEI13

RP-152147 LTE DL 4 Rx antenna ports RAN4 CR Pack Rel-13 LTE_4Rx_AP_DL-Core, LTE_4Rx_AP_DL-Perf
conclusion: approved

11.7.12 Licensed-Assisted Access using LTE [LTE_LAA]

RP-151650 LS regarding LAA Coexistence (WFA_LS_20151006; to: RAN4, RAN; cc: -; contact: CEO Wi-Fi Alliance) Wi-Fi Alliance LS in LS01 Rel-13 LTE_LAA-Perf
no RAN action requested
conclusion: noted, RAN chair drafted LS answer drafted in RP-152117

RP-151664 LS on LAA co-existence testing (R4-158439; to: RAN; cc: -; contact: Ericsson) RAN4 LS in Rel-13 LTE_LAA LS01
no explicit RAN action requested
conclusion: noted, no LS answer

RP-151866 Status report for WI: Licensed-Assisted Access to Unlicensed Spectrum, rapporteur: Ericsson RAN1 WI status report Rel-13 LTE_LAA
discussion: Orange: proposal to revise and align some of the WGs (RAN1 and RAN4) agreements to avoid misinterpretation of the FS applicable to LAA bands (see considerations in RP-152011);
Blackberry: discussion regarding level of completion and remaining RAN2 actions;
Broadcom: There is a missing TU allocation for RAN4#78bis (R4RF Perf and R4RD Perf). In RP-151600, there is TU allocation for the RAN4#78bis meeting, and the intention was not to change that. In addition, Yes or No was not selected for the box to indicate whether there are changes with respect to RP-151600;
MCC: WI exception request in RP-152010
Blackberry: still two open issues in RAN2 and would like to know how this will be addressed
RAN2 chair: the 2 open issues are:
i/ Introduction of mapping from QCI to LBT priority classes
ii/ Introduction of some eNB behaviour relating to LBT that was agreed in RAN1 but they preferred to be captured in a RAN2 spec
and we could cover both under maintenance with cat.F CRs in the next quarter
Telecom Italia: no RAN3 CRs?
Ericsson: no RAN3 impact
conclusion: revised in RP-152233
RP-152233 Status report for WI: Licensed-Assisted Access to Unlicensed Spectrum, rapporteur: Ericsson RAN1 WI status report Rel-13 LTE_LAA
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 0%, June 16; Core part WI completed

RP-151977 Status Report of WI Licensed-Assisted Access using LTE; rapporteur: Ericsson RAN1 WI status report Rel-13 LTE_LAA
conclusion: withdrawn, see RP-151866 instead

RP-152010 Work item exception request for Licensed-Assisted Access to Unlicensed Spectrum Ericsson WI exception request RAN1 Rel-13 LTE_LAA-Core
conclusion: withdrawn

RP-152011 Considerations regarding LAA specification in 3GPP RAN ORANGE discussion Rel-13 LTE_LAA
Consideration regarding some of the latest agreements made by RAN1 and RAN4 regarding LAA
discussion: RAN1 chair: we had a long discussion in RAN1 about this and came up with the current consensus
Huawei: we have to read all specs together; even if TDD is mentioned it it clear that only frame structure 3 can be used
Orange: RAN1 and RAN4 agreeements were done in the last moment and proposal 1 is really needed
RAN4 chair (Nokia Networks): agrees that RAN4 made agreements before RAN1 agreements and recommends that RAN4 double-checks
Ericsson: sounds more like a clean-up
RAN chair: there seems to be no disagreement with the Orange technical comments, we just need to find a way to document this (either this week or by maintenance in WGs)
Samsung: from RAN4 CRs it is clear that band 46 is for frame structure type 3
RAN1 chair: asks Orange to talk with Ericsson and Samsung to avoid longer debates in next RAN1 meeting
RAN chair: discuss offline whether it can be already solved at RAN #70 or whether WG should address this
conclusion: noted, it was agreed that we will do this cleanup in RAN1 and/or RAN4 specs;
finally R1-157914 (36.211 CR) of RP-152026 is revised in RP-152258;
R4-158443 and RP-158444 of RP-152148 were approved without modification

RP-152026 Introduction of Rel-13 LAA feature to LTE RAN1 specs RAN1 CR Pack Rel-13 LTE_LAA-Core

discussion: MCC: late submission, WI exception request;
Orange: proposal to revise the content to avoid misinterpretation of the FS applicable to LAA bands (see considerations in RP-152011)
conclusion: all CRs of RP-152026 are approved except R1-157914 which is revised in RP-152258

RP-152258 Introduction of LAA Ericsson CR 36.211 0205 4 B Rel-13 LTE_LAA-Core
company CR; to replace R1-157914 (CR0205 rev 3 to TS 36.211) of RP-152026
discussion: Ericsson: note added following RP-152011 discussions
conclusion: approved

RP-152078 RAN2 agreed CRs on Introduction of Licensed-Assisted Access using LTE RAN2 CR Pack Rel-13 LTE_LAA-Core
discussion: Blackberry: discussion regarding level of completion and remaining RAN2 actions
MCC: WI exception request
conclusion: approved

RP-152148 Licensed-Assisted Access using LTE RAN4 CR Pack Rel-13 LTE_LAA-Core
discussion: MCC: WI exception request
conclusion: approved

RP-152116 Draft LS on LAA (to: IEEE 802 LMSC, Wi-Fi Alliance; cc: RAN1, RAN2, RAN4; contact: RAN Chairman (Qualcomm), RAN1 Chairman (NTT DOCOMO)) RAN Chairman (Qualcomm), RAN1 Chairman (NTT DOCOMO) LS out Rel-13 LTE_LAA
discussion: RAN chair: Barcelona and next meeting number will be changed
conclusion: revised in RP-152280 to attach RAN1/2/4 approved CRs
RP-152280 LS on LAA (to: IEEE 802 LMSC, Wi-Fi Alliance; cc: RAN1, RAN2, RAN4; contact: RAN Chairman (Qualcomm), RAN1 Chairman (NTT DOCOMO)) RAN LS out Rel-13 LTE_LAA
conclusion: approved

RP-152117 Draft Reply LS to RP-151650 on LAA coexistence tests (to: Wi-Fi Alliance; cc: RAN4, IEEE 802 LMSC; contact: RAN Chairman (Qualcomm), RAN4 Chairman (Samsung)) RAN Chairman (Qualcomm), RAN4 Chairman (Samsung) LS out Rel-13 LTE_LAA
discussion: RAN chair: Barcelona and next meeting number will be changed
conclusion: revised in RP-152234
RP-152234 Reply LS to RP-151650 on LAA coexistence tests (to: Wi-Fi Alliance; cc: RAN4, IEEE 802 LMSC; contact: RAN Chairman (Qualcomm), RAN4 Chairman (Samsung)) RAN LS out Rel-13 LTE_LAA
conclusion: approved

11.7.13 Elevation Beamforming/Full-Dimension (FD) MIMO for LTE [LTE_EBF_FDMIMO]

RP-151845 Status report for WI Elevation Beamforming/Full-Dimension (FD) MIMO for LTE; rapporteur: Samsung RAN1 WI status report Rel-13 LTE_EBF_FDMIMO
discussion: MCC: late submission;
Ericsson: Although RAN4 BS core requirements have been completed for AAS, it is indicated that the clarification of the applicability of non AAS core BS RF requirements specs 36/37.104 for FD-MIMO has not been clarified in these specs (36/37.104) according to the agreed WF in R4-153330.
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 5%, June 16; Core part completed

RP-151937 Way forward on handling unwanted emissions beyond 8 antennas NTT DOCOMO discussion Rel-13 LTE_EBF_FDMIMO-Core
How to handle out of band emission requirements beyond 8 antennas is provided.
conclusion: withdrawn

RP-151959 Applicability of the non AAS specification for FD-MIMO and advanced arrays Ericsson discussion Rel-13 FS_LTE_3D_channel
discussion: Huawei: there is no consensus in RAN4 so far, fine to close the Core part
NTT DOCOMO: supports Ericsson
Ericsson: LS from RAN4 that a clarification in RAN4 BS spec will be needed (so we will not discuss this anymore, just how to capture it)

RAN4 chair (Samsung): remaining open topic will be discussed under TEI13 in RAN4 as WI is considered completed
conclusion: noted ; by RAN4#78, RAN4 is to complete the work in accordance with the RAN4 agreements captured in the RAN4 LS to RAN in RP-151153 (R4-154982).

RP-152025 Introduction of Rel-13 EBF/FD-MIMO feature to LTE RAN1specs RAN1 CR Pack Rel-13 LTE_EBF_FDMIMO-Core
discussion: MCC: late submission
conclusion: approved

RP-152079 RAN2 agreed CR on Introduction of Elevation Beamforming/Full-Dimension (FD) MIMO for LTE RAN2 CR Pack 36.331 1961 2 B Rel-13 LTE_EBF_FDMIMO-Core
conclusion: approved

11.7.14 Support of single-cell point-to-multipoint transmission in LTE [LTE_SC_PTM]

RP-151804 Status report for WI: Support of single-cell point-to-multipoint transmission in LTE, rapporteur: Huawei RAN2 WI status report Rel-13 LTE_SC_PTM
discussion: MCC: Perf. part target June 16 impossible if 100% completed in Dec.15
conclusion: noted, approved: Core: 100%, Dec.15; Perf.: 100%, Dec.15; Core and Perf. parts completed

RP-152031 Introduction of Rel-13 SC-PTM feature to LTE RAN1 specs RAN1 CR Pack Rel-13 LTE_SC_PTM-Core
conclusion: approved

RP-152080 RAN2 agreed CRs on Introduction of Support of single-cell point-to-multipoint transmission in LTE RAN2 CR Pack Rel-13 LTE_SC_PTM-Core
conclusion: approved

RP-152101 RAN3 CRs for Support of single-cell point-to-multipoint transmission in LTE RAN3 CR Pack Rel-13 LTE_SC_PTM-Core
conclusion: approved

11.7.15 Core part: Extension of Dual Connectivity in E-UTRAN [LTE_dualC_ext-Core]

RP-151743 Status report for WI Core part: Extension of Dual Connectivity in E-UTRAN; rapporteur: Samsung RAN3 WI status report Rel-13 LTE_dualC_ext-Core
conclusion: noted, approved: 100%, Dec.15; WI is completed

RP-151798 Revised WID: Extension of Dual Connectivity in E-UTRAN Samsung WID revised RAN3 Rel-13 LTE_dualC_ext-Core
last approved WID: RP-151008
conclusion: approved

RP-152081 RAN2 agreed CRs on Introduction of Extension of Dual Connectivity in E-UTRAN RAN2 CR Pack Rel-13 LTE_dualC_ext-Core
conclusion: approved

RP-152102 RAN3 CRs for Extension of Dual Connectivity in E-UTRAN RAN3 CR Pack Rel-13 LTE_dualC_ext-Core
conclusion: approved

11.7.16 Perf. part: Interference mitigation for downlink control channels of LTE [LTE_IM_DLCCH-Perf]

RP-151874 Status report of WI Perf. part: Interference Mitigation for Downlink Control Channels of LTE; rapporteur: Intel Corporation RAN4 WI status report Rel-13 LTE_IM_DLCCH-Perf
discussion: Qualcomm: TU allocation is unrealistic for the control channel IM work item; we used much more time in last RAN4 meeting, we had coffee break and evening ad hocs and rapporteur thinks 0.5 TU is sufficient to complete it
RAN4 chair (Samsung): can discuss time budget offline
Intel: we agreed for increasing to 1TU for the rest of the WI
conclusion: revised in RP-152271

RP-152271 Status report of WI Perf. part: Interference Mitigation for Downlink Control Channels of LTE; rapporteur: Intel Corporation RAN4 WI status report Rel-13 LTE_IM_DLCCH-Perf
conclusion: noted, approved: 40%, June 16

11.7.17 Core part: Narrowband Internet of Things (IOT) [**New WI**: NB_IOT-Core]

RP-152128 LS on recently established new Study Group 20 (SG20)
(ITU-T SG20/COM 20-LS008-E; to: GERAN, RAN, CT, SA, ISO/TC 122; ISO/TC 204; ISO/IEC JTC 1/SC 6; ISO/IEC JTC 1/SC 31; ISO/IEC JTC 1/WG 7; ISO/IEC JTC 1/WG 10; ISO/IEC JTC 1/WG 11; GS1 EPCglobal; EC/IERC; ETSI; CEN; OMA; YRP; Ecma International; GISFI; TIA; GSC MSTF; OGC; oneM2M; ISO/IEC JTC 1/SC 29/WG11 for Augmented Reality (AR) standards; 3GPP; W3C; IETF; IEEE-SA; AHCIET; ANEC; ANSI; BSI; CCSA; CDP; CEDARE; CEN/CENELEC/ETSI SSCC CG; CIC; CITEL; City Protocol Society (CPS); The Climate Group; Digital Europe; DIN; DKE (DIN/VDE); ECLAC; ETNO; ETSI TC EE; ETSI TC Smart M2M; European Commission (DG Connect); GeSI; GSMA; ICLEI; IDB; IEC/SEG1; IEC/TC 100; IEC/TC 111; IEEE; ISO/TC 268/SC 1; MOHURD; SAC; StEP; UNCDF; UNDP; UNECE; UNEP; UNESCO; UNFCCC; UN-Habitat; UNIDO; WBCSD for GHG Protocol; WHO; WMO; cc: -; contact: ETRI) ITU-T SG20
LS in Rel-13 NB_IOT-Core
no RAN action requested
conclusion: noted, no LS answer

RP-151666 LS on NB-IoT Evaluations
(R1-157742; to: RAN; cc: RAN2, RAN3, RAN4, SA2; contact: Huawei) RAN1
LS in Rel-13 NB_IOT-Core
no explicit RAN action requested
conclusion: noted, no LS answer

RP-151931 Status report for WI: NarrowBand IOT (NB-IOT); rapporteur: Vodafone RAN1 WI status report Rel-13 NB_IOT-Core
discussion: MCC: why does this WI have a Perf. part target?
conclusion: noted, approved: Core part: 25%, March 16
Note: WI will be kept in REL-13 (due to PCG34_39r2 decision)

Architectural aspects:

RP-151832 Compatible S1 architecture with eMTC and normal UEs NTT DOCOMO discussion Rel-13 NB_IOT-Core
Proposal: U-plane based solution with AS information stored in RAN should be specified such that it is compatible with Rel-13 eMTC UEs and normal UEs in the NB-IoT WI.
conclusion: noted

RP-151991 Applicability of SA2's architecture optimisations to non-NB-IOT devices in release 13 VODAFONE Group Plc discussion Rel-13 FS_AE_CIoT
proposal:
This TSG RAN plenary to decide which of the NB-IoT architecture enhancements should be applicable in Rel-13 to:
"Cat 1 and above" devices operating in normal coverage
"Cat 1 and above" devices operating in eMTC coverage enhancement mode
Cat 0 devices operating in normal coverage
Cat 0 devices operating in eMTC coverage enhancement mode
Category M1:Bandwidth reduced devices operating in normal coverage
Category M1:Bandwidth reduced devices operating in eMTC coverage enhancement mode
Others?
However, to simplify the process of taking all issues into account, a quick solution would be to restrict the Release 13 Architecture Enhancements solely to NB-IoT, yet request the working groups to develop changes bearing future extensions in mind.
conclusion: noted

RP-151970 Operator requirements for NB-IoT standardisation Deutsche Telekom AG discussion Rel-13 NB_IOT
We propose to postpone discussion on TDD support for NB-IoT to Rel-14 in order to ensure timely finalization of Rel-13 work

conclusion: noted

discussion:
Mediatek: what is the main reason for having the UP solution instead of CP solution
Ericsson: we had an input at the last RAN meeting explaining this, more efficient radio resource usage
Vodafone: main question is: for CP and UP solution: do you support just NB-IOT or other devices as well; as this will cause work on RAN2 and also in SA2 we have to avoid that it delays the work
Qualcomm: we should stick to the agreement that we have both solutions, we should not delay completion of the NB-IOT WI
Intel: solution 2-solution 18 discussion was already decided in SA2 so we should not reopen the discussion
Nokia Networks: enabling to eMTC devices may be beneficial but agrees we should not delay the feature
Huawei: limiting to NB-IOT for REL-13 is preferred
RAN chair: it seems people say: if we can achieve it without delay we could still try
Samsung: would like to keep door open for C-plane solution as well
RAN chair: suggests offline discussion (rapporteur: Ericsson), involve corresponding WG chairmen

RAN chair: some other aspects from DT paper:
duplex mode: REL-13: FDD only, TDD in REL-14: only if needed
Huawei: agrees with Deutsche Telekom proposal
ALU: at forward compatibility with TDD is included in REL-13
Deutsche Telekom: suggests to remove "at least"
Telecom Italia: how much effort is it to add forward compatibility hooks for TDD?
conclusion: REL-13: FDD only + forward compatibility for TDD

band support: focus on 900MHz
Telefonica: is moredifficult, you can assume single band UE capability, we would at least like to add band ...
NTT DOCOMO: premature to narrow down the number of bands at the moment
Deutsche Telekom: prioritization should be on 900MHz for RAN4 load reduction, we should focus on below 1GHz
Qualcomm: suggests to have this discussion in RAN4
Vodafone: there was someone proposing support for 5 bands for a low cost device, so we should be reasonable, if we move it to RAN4 this will be difficult
conclusion: offline discussion (rapporteur: Vodafone)

Singletone transmission with 3.75 and 15 kHz is mandatory for UE to support:
Huawei: was agreed in RAN1, so ok

Multitone transmission is mandatory for UE and indication on interoperability testing:
RAN1 chair: premature to decide this
Telecom Italia: we need a RAN guidance on NB-IOT aspects from RAN
Vodafone: single tone is certainly first and we can discuss the multitone further
Ericsson: initial access is certainly single tone
Qualcomm: initial access should be 15kHz single tone, rest can be discussed further
CMCC, NTT DOCOMO: should be discussed in WG, this was also agreed in RAN1
Telecom Italia: we need to provide priorities by RAN and single tone should be mandatory
Intel: if we could make a decision for initial access this would be helpful
Deutsche Telekom: we want to have a single category; remove [ ] from 3.75kHz
Huawei: 3.75kHz is needed for coverage
RAN1 chair: please remember to reduce the scope to avoid high workload
Telecom Italia: suggests offline discussion on Wed afternoon, this is more urgent than 5G discusssion
conclusion: offline discussion (rapporteur: Huawei)

RP-151933 Way Forward on NB-IoT work Huawei, HiSilicon discussion Rel-13 NB_IOT-Core
conclusion: withdrawn

RP-151932 Revision of WI: Narrowband IOT (NB-IOT) Huawei WID revised RAN1 Rel-13 NB_IOT-Core
last approved WID: RP-151621; rapporteur: Vodafone; addition of performance part (i.e. this revised WID is introducing a new Perf. part WID for LTE at the same time!);

conclusion: revised in RP-152220

RP-152220 Revised WID: Core part: Narrowband Internet of Things (IOT) Huawei WID revised RAN1 Rel-13 NB_IOT-Core

last approved WID: RP-151621; revision of RP-151932; rapporteur: Vodafone; addition of performance part (i.e. this revised WID is introducing a new Perf. part WID for LTE at the same time!);

conclusion: revised in RP-152232

RP-152232 Revised WID: Core part: Narrowband Internet of Things (IOT) Huawei WID revised RAN1 Rel-13 NB_IOT-Core

conclusion: revised in RP-152284

RP-152284 Revised WID: Core part: Narrowband Internet of Things (IOT) Huawei WID revised RAN1 Rel-13 NB_IOT-Core

conclusion: approved; **NEW Perf. part WI is introduced**

Thursday:

RP-152281 Report of offine discussion on NB-IOT Huawei report Rel-13 NB_IOT-Core

report of Wed afternoon offline discussion

proposal for LS to RAN1:

- *There is only one NB-IoT UE category*
- *At least the first UL message after NB-PRACH for initial access to the network can be via single-tone UL*
- *Recommending a working assumption that both of the following are supported by the specifications:*
  - *3.75 kHz subcarrier spacing for the first transmission after the first UL random access transmission*
  - *15 kHz subcarrier spacing for the first transmission after the first UL random access transmission*
  - *Details of network configurability is left to WGs (including the possibility of configuring both in the same cell)*
- *RAN has made no decision on capability/interoperability testing signaling*

discussion: Qualcomm: single access method preferable but we would be ok with the compromise

conclusion: revised in RP-152294

RP-152294 RP-152294 Report of offine discussion on NB-IOT Huawei, HiSilicon report Rel-13 NB_IOT-Core

discussion: Qualcomm: not happy with the text
Mediatek: text is confusing now
Ericsson: we need at least one single tone
ALU, DT: support Ericsson
LG: we should include last sentence of yesterday, and multi-tone is ffs
RAN chair: discussion can be done in RAN1
Mediatek: monitoring missing and we are not convinced that single tone is the right option, we could also have "single tone/multitone"
RAN chair: "can" allows this
RAN1 vice-chair (ALU): "can" means that we cannot decide at next meeting that single tone cannot be supported, so it means "can at least be single tone"
Mediatek: so what is the capability assumption?
Qualcomm: there was a last bullet in the previous version and without it, it will be difficult to agree here
RAN chair: can we just add the sentence in the minutes?
Qualcomm: this is not acceptable
ALU: if the sentence does not cause any harm, then simply add it

conclusion: noted, no consensus so far, Huawei will draft new text in an LSout in RP-152297

RP-152282 Way forward on NB-IOT Panasonic, NTT DOCOMO discussion Rel-13 NB_IOT-Core

proposed way forward:

- *Both single tone and multiple tone are mandatory.*
  - *RAN has made no decision on capability/interoperability testing signaling.*
  - *Interoperability testing signaling needs to take into account the network/testing availability.*
- *The first UL message after NB-PRACH for initial access to the network can be via at least single-tone UL*

- *Note that bandwidth/number of the tone/subcarrier spacing of NB-PRACH is separate discussion.*

- *The above first UL message shall allow to carry at least 48 bits in order to minimize the protocol specification impact in NAS/RRC/PDCP/RLC/MAC.*
  - *NOTE: The message size of UL-CCCH-Message containing RRCConnection(Reestablishment)Request is 48 bits.*
- *Recommending a working assumption that both of the following are supported by the specifications:*
  - *3.75 kHz subcarrier spacing for the first transmission after the first UL random access transmission*
  - *15 kHz subcarrier spacing for the first transmission after the first UL random access transmission*
  - *Details of network configurability is left to WGs (including the possibility of configuring both in the same cell)*

discussion: Mediatek: we should not jump into RAN1 discussion, RAN should focus on capabilities
DT: a bit a disappointing that after 4 hours offline discussion we see now diffee
ZTE: shares concern with Mediatek that multitone has to be discussed in RAN1
RAN2 chair: it needs to be clarified what RAN1 and what RAN2 has to do as this is a but blurry at the moment
RAN chairman: discuss this over Thu lunch break, we will come back

conclusion: noted

RP-152268 Way forward on NB-IOT bands Vodafone, Deutsche Telekom, Telefónica, Orange, China Unicom, Verizon, CMCC, Telecom Italia, AT&T discussion Rel-13 NB_IOT-Core

proposal:

- *The following bands shall be considered with high priority for defining any RAN4 band specific requirement within Release 13:*
  - *Bands 1, 3, 5, 8, 12, 13, 17, 19, 20, 26, 28*
  - *Note if we identify there are other bands not having significant specific issues and there is consensus in RAN4, these could be considered as well*
- *Whether one or multiple bands are supported in a device is a UE implementation issue*

discussion: Qualcomm: unclear what is intention of the last bullet
Vodafone: we do not want to mandate this
Mediatek: would be interesting to know which operator is supporting which one as more bands mean more costs
Voafone: can provide this information offline
Orange: in Europe we have band 8 and band 20 etc.
RAN chair: we will focus on FDD in REL-13 and TDD can be considered later
Ericsson: wondering about 2GHz bands?
DT: we would prefer band 8, there is no single band below 1GHz which is available all over the world
RAN chair: too much spectrum fragmentation will increase the hosts, hopefully the market will automatically regulate this
Huawei: we should prioritize
RAN chair: it seems operators could not converge so far but agrees that operators should strive to reduce the number of options
DT: suggests that RAN4 will work on these bands
Qualcomm: RAN2 can decide about the signalling themself so last bullet does not limit this
RAN chair: correct, up to RAN2
Qualcomm: some bands are even overlapping, is there no way to reduce the options?
RAN chair: at the moment it seems not so let's endorse this way forward

conclusion: noted, way forward is endorsed, Huawei will reflect this in the WID revision as well

RP-152276 Way forward on S1 signalling solutions for non-NB-IoT UEs Ericsson discussion Rel-13 NB_IOT-Core

Proposals:

- *Signalling design for solution 2 and solution 18 for NB-IoT UEs is done in NB-IoT session. Additional changes due to support for other UEs will be done in TEI13 session. However, additional optimizations e.g. due to mobility will not be discussed.*
- *We will have*

- *o CRs for NB-IoT UEs (including e.g. L1 parameters, signalling enhancements and other enhancements)*
- *o and a separate CR of additional impact due to non-NB-IoT UEs (e.g. capabilities).*

- *First CR set is discussed in NB-IoT session and second CR set (additional impact due to non-NB-IoT UEs) in TEI13. The second CR set can be written as an alternative CR for the first one (in case they are ready at the same time).*
- *RAN2 and RAN3 have to allocate TEI13 time for the second CR set.*
- *Will inform CT1/SA2 by LS and they can apply same approach.*
- *This approach is applied both for Sol2 and Sol18 unless there are significant impacts on specifications identified.*

discussion: RAN chair: already very detailed
RAN3 chair: CRs will be handled in WGs
Vodafone: SA2 needs some clarity on what RAN thinks on these solutions
RAN chair: just summarize the principles and not CR management (remove 3rd bullet)
Mediatek: can we assume that RAN2 will comply with CP/UP assumption with SA2?
RAN chair: RAN2 and SA2 have to synchronize
Huawei: sympathy with Mediatek to simplify this
conclusion: revised in RP-152285 (e.g. remove 3rd bullet and adapt 4th bullet)

RP-152285 Way forward on S1 signalling solutions for non-NB-IoT UEs Ericsson, Docomo, Softbank, AT&T, Verizon, Nokia, Qualcomm, Alcatel-Lucent, ALU Shanghai Bell, LG, Samsung, Intel, Sierra Wireless, ZTE, InterDigital, Sony, Vodafone discussion Rel-13 NB_IOT-Core
discussion: Mediatek: RAN2 will be synchronous with SA2 so we are fine
conclusion: noted, way forward endorsed

RP-152277 Draft LS on S1 signalling solutions for non-NB-IoT UEs (to: SA2, CT1, SA, CT3, CT4, RAN2; cc: RAN1; contact: Ericsson) Ericsson LSout Rel-13 NB_IOT-Core
conclusion: revised in RP-152292

RP-152292 Draft LS on S1 signalling solutions for non-NB-IoT UEs (to: SA2, SA3, SA, CT1, CT3, CT4, RAN2, RAN3; cc: RAN1; contact: Ericsson) Ericsson LS out Rel-13 NB_IOT-Core
conlsuion: revised in RP-152296

RP-152296 LS on S1 signalling solutions for non-NB-IoT UEs (to: SA2, SA3, SA, CT1, CT3, CT4, RAN2, RAN3; cc: RAN1; contact: Ericsson) RAN LS out Rel-13 NB_IOT-Core
conclusion: approved

RP-152297 Draft LS on NB-IOT (to: RAN1; cc: -; contact: Huawei) Huawei LSout Rel-13 NB_IOT-Core
MCC: This is a draft LS which has the wrong source on the Tdoc
discussion: Mediatek: both single-tone and multi-tone should be mandatory
Huawei: we cannot decide on the fly how many IOT bits we would need for this
Orange: some previous text disappeared and it is unclear who requested it and why
Ericsson: PUSH and intial access (this is what Meditek is talking about) need to be distinguished
Mediatek: we need to clarify which UE capabilities we assume
ALU: we have not yet decided about this
RAN2 chair: add cc: RAN2
Vodafone: let's approve the LS and Mediatek can put their
conclusion: revised in RP-152299

RP-152299 LS on NB-IOT (to: RAN1; cc: RAN2; contact: Huawei) RAN LS out Rel-13 NB_IOT-Core
conclusion: approved
Mediatek concern: RAN should not further differentiate UE category/capability within NB-IoT, there should be single UE category for NB-IoT

11.7.18 Core part: Further Enhancements of Minimization of Drive Tests for E-UTRAN
[**New WI**: LTE_eMDT2-Core]

RP-151748 Status report for WI: Further Enhancements of Minimization of Drive Tests for E-UTRAN; rapporteur: China Mobile Com. Corporation RAN2 WI status report Rel-13 LTE_eMDT2-Core
conclusion: noted, approved: 100%, Dec.15, WI is completed

RP-152082 RAN2 agreed CRs on Introoduction of Further Enhancements of Minimization of Drive Tests for E-UTRAN RAN2 CR Pack Rel-13 LTE_eMDT2-Core
conclusion: approved

RP-152103 RAN3 CRs for Introduction of feMDT RAN3 CR Pack Rel-13 LTE_eMDT2-Core
conclusion: approved

11.7.19 Core part: LTE-WLAN RAN Level Integration supporting legacy WLAN
[**New WI**: LTE_WLAN_radio_legacy-Core]

RP-151657 Reply LS to RP-151623 on IPsec tunnelling mechanism for LTE-WiFi aggregation (S3-152467; to: RAN, RAN2, SA2; cc: -; contact: NTT DOCOMO) SA3 LS in Rel-13 LTE_WLAN_radio_legacy-Core
no explicit RAN action requested
conclusion: noted, no LS answer

RP-151665 Reply LS to RP-151623 on New WI on LTE-WLAN RAN Level Integration supporting legacy WLAN (S2-154407; to: RAN, RAN2, RAN3, SA3; cc: -; contact: Alcatel-Lucent) SA2 LS in Rel-13 LTE_WLAN_radio_legacy-Core
no explicit RAN action requested
discussion: ALU: RAN2 may reply to this
conclusion: noted, no LS answer

RP-151993 Status Report of WI Core part: LTE-WLAN RAN Level Integration supporting legacy WLAN; rapporteur: Alcatel-LucentRAN2 WI status report Rel-13 LTE_WLAN_radio_legacy-Core
discussion: MCC: why does this WI have a Perf. part target? WI exception request
RAN2 chair: 1TU for RAN2 was agreed
conclusion: noted, approved: 95%, March 16

RP-151990 Exception Sheet for WI LTE-WLAN RAN Level Integration supporting legacy WLAN Alcatel-Lucent WI exception request RAN2 Rel-13 LTE_WLAN_radio_legacy-Core
RAN #69 decided to not allow a REL-13 exception for this WI
discussion: Sprint: supports this, we just need to have the reply from SA3
Deutsche Telekom: surprised to see this exception sheet as we agreed at RAN #69 to have no exception
ALU: only small amount of work in RAN2 remaining, unexected SA3 impact
Mediatek, AT&T: supports the exception
DT: then there is hopefully also no problem for the interworking part on the other WLAN WI
Qualcomm: shares concern from DT
T-Mobile US: supports this exception
Telefonica: supports the exception
RAN chair: acknowledges that this means changing the agreement of RAN #69
Huawei: fine to have the exception
Qualcomm: DRB identity identification can not be done in stage 2, stage 3 is needed
ALU: fine to add this
Ericsson
conclusion: revised in RP-152235

RP-152235 Exception Sheet for WI LTE-WLAN RAN Level Integration supporting legacy WLAN Alcatel-Lucent WI exception request RAN2 Rel-13 LTE_WLAN_radio_legacy-Core
conclusion: approved, RAN2 will complete the work based on the SA3 reply

RP-151868 CR to 36.331 for introduction of LTE-WLAN RAN Level Integration supporting legacy WLAN Alcatel-Lucent CR 36.331 1940 1 B Rel-13 LTE_WLAN_radio_legacy-Core
company CR; R2-156367 was not treated at RAN2 #92 and is under email discussion in RAN2 until next RAN2 meeting; this CR is a revision of R2-156367 to inform RAN about the amount of work that remains to be done in connection with exception request RP-151990
conclusion: revised in RP-152231

RP-152231 CR to 36.331 for introduction of LTE-WLAN RAN Level Integration supporting legacy WLAN Alcatel-Lucent CR 36.331 1940 1 B Rel-13 LTE_WLAN_radio_legacy-Core
conclusion: not pursued

RP-152083 RAN2 agreed CR on Introduction of Stage 2 text for LTE-WiFi integration for legacy WLAN RAN2 CR Pack 36.300 0800 3 B Rel-13 LTE_WLAN_radio_legacy-Core
MCC: WI exception request
conclusion: approved

11.8 Open LTE only related WIs (spectrum and CA related)

NOTE: For the WIs under agenda item 11.8 and 12.1 no separate status reports per WI will be provided but a Tdoc will be submitted to agenda item 11.8 by RAN4 with a collection of all % complete and target dates for each WI.

RP-151640 Status Report of RAN4 CA WIs RAN4 chairman (Nokia Networks) WI status report - -
MCC: Instead of separate SRs for each CA WI, RAN4 provides a single spreadsheet for REL-13 CA WIs tracking completion level, target date and any other essential information.
conclusion: noted, % complete and target dates are approved as in RP-151640 unless modified in the table below in red

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.01.1	650141	LTE_CA_B1_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157768 , R4-153757
11.08.01.1	650241	LTE_CA_B1_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-153758, R4-153935, R4-153936
11.08.01.2	660182	LTE_CA_B3_B41-Core	REL-13	Dec.15	100	China Telecom	TS 36.101 CR agreed in R4-157768. TS 36.104 CR agreed in R4-158004.
11.08.01.2	660282	LTE_CA_B3_B41-Perf	REL-13	Dec.15	100	China Telecom	TS 36.307 CRs agreed in R4-157771, R4-157772. TS 36.141 CR agreed in R4-158005.
11.08.01.3	690173	LTE_CA_B5_B38-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR agreed in R4-157768. TS 36.104 CR agreed in R4-158004.
11.08.01.3	690273	LTE_CA_B5_B38-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157771, R4-157772. TS 36.141 CR agreed in R4-158005.
11.08.01.4	620123	LTE_CA_B8_B27-Core	REL-13	Dec.15	30	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped
11.08.01.4	620223	LTE_CA_B8_B27-Perf	REL-13	Dec.15	30	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped
11.08.01.5	650140	LTE_CA_B20_B40-Core	REL-13	Dec.15	100	Ericsson	TS 36.101 CR agreed in R4-157768. TS 36.104 CR agreed in R4-158004.
11.08.01.5	650240	LTE_CA_B20_B40-Perf	REL-13	Dec.15	100	Ericsson	TS 36.307 CRs agreed in R4-157771, R4-157772. TS 36.141 CR agreed in R4-158005.
11.08.01.6	680175	LTE_CA_700EU_B20-Core	REL-13	Dec.15	100	TeliaSonera	CRs were agreed in RAN4#76bis, R4-156796, -6890, -6891, -6561, -6099, -6100, -6102, -6490, -6101. R3 CRs agreed in R3-152682, -2436)
11.08.01.6	680275	LTE_CA_700EU_B20-Perf	REL-13	Dec.15	100	TeliaSonera	CRs were agreed in RAN4#76bis, R4-156848, -5894…-5896, -6892, -6893, -6562
11.08.02.01	661100	LTE_CA_B1_B3_B7-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-158446 TS36.104 CR agreed in R4-158006
11.08.02.01	661200	LTE_CA_B1_B3_B7-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157774, R4-157775, R4-157776, R4-157777 TS 36.141 CR agreed in R4-158007
11.08.02.02	660190	LTE_CA_B1_B3_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157773 R4-158006
11.08.02.02	660290	LTE_CA_B1_B3_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-158007, R4-157776 , R4-157777
11.08.02.03	660187	LTE_CA_B1_B8_B28-Core	REL-13	March 16	40	Softbank Mobile	Delta Tib, Rib agreement and final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.02.03	660287	LTE_CA_B1_B8_B28-Perf	REL-13	March 16	40	Softbank Mobile	Final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.04	660191	LTE_CA_B1_B8_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157773, R4-158006
11.08.02.04	660291	LTE_CA_B1_B8_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-158007, R4-157776 , R4-157777
11.08.02.05	690174	LTE_CA_B1_B11_B18-Core	REL-13	Dec.15	100	KDDI	R4-158006, R4-158446
11.08.02.05	690274	LTE_CA_B1_B11_B18-Perf	REL-13	Dec.15	100	KDDI	R4-157774, R4-157775, R4-157776, R4-157777, R4-158007
11.08.02.06	670173	LTE_CA_B2_B4_B7-Core	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.06	670273	LTE_CA_B2_B4_B7-Perf	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.07	670172	LTE_CA_B2_B7_B12-Core	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.07	670272	LTE_CA_B2_B7_B12-Perf	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.08	680181	LTE_CA_B3_B7_B38-Core	REL-13	Dec.15	100	Nokia Networks	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006.
11.08.02.08	680281	LTE_CA_B3_B7_B38-Perf	REL-13	Dec.15	100	Nokia Networks	TS 36.307 CRs agreed in R4-157774, R4-157775, R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.
11.08.02.09	620132	LTE_CA_B3_B8_B27-Core	REL-13	Dec.15	25	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped
11.08.02.09	620232	LTE_CA_B3_B8_B27-Perf	REL-13	Dec.15	25	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped
11.08.02.10	660195	LTE_CA_B3_B8_B28-Core	REL-13	March 16	40	Softbank Mobile	Delta Tib, Rib agreement and final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.10	660295	LTE_CA_B3_B8_B28-Perf	REL-13	March 16	40	Softbank Mobile	Final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.11	660192	LTE_CA_B3_B8_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157773 R4-155070
11.08.02.11	660292	LTE_CA_B3_B8_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-155071, R4-154532 , R4-154533
11.08.02.12	680178	LTE_CA_B3_B20_B32-Core	REL-13 => REL-14	March 16	50	Ericsson	ΔTIB and ΔRIB values needs to be defined. Proponent should provide the exception sheet to keep the WI in Rel-13. => no exception provided, WI shifted to REL-14
11.08.02.12	680278	LTE_CA_B3_B20_B32-Perf	REL-13 => REL-14	March 16	50	Ericsson	ΔTIB and ΔRIB values needs to be defined. Proponent should provide the exception sheet to keep the WI in Rel-13. => no exception provided, WI shifted to REL-14
11.08.02.13	690177	LTE_CA_B3_B41_B41-Core	REL-13	Dec.15	100	ZTE	TS 36.101 CR agreed in R4-158446.
11.08.02.13	690277	LTE_CA_B3_B41_B41-Perf	REL-13	Dec.15	100	ZTE	TS 36.307 CRs agreed in R4-157776, R4-157777.
11.08.02.14	690176	LTE_CA_B3_B41_B42-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006.

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.02.14	690276	LTE_CA_B3_B41_B42-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.
11.08.02.15	670170	LTE_CA_B4_B4_B7_BWset-Core	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007
11.08.02.15	670270	LTE_CA_B4_B4_B7_BWset-Perf	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007
11.08.02.16	670171	LTE_CA_B4_B7_B12_BWset-Core	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007
11.08.02.16	670271	LTE_CA_B4_B7_B12_BWset-Perf	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007
11.08.02.17	690175	LTE_CA_B5_B40_B40-Core	REL-13	Dec.15	100	ZTE	TS 36.101 CR agreed in R4-158446.
11.08.02.17	690275	LTE_CA_B5_B40_B40-Perf	REL-13	Dec.15	100	ZTE	TS 36.307 CRs agreed in R4-157776, R4-157777.
11.08.02.18	670174	LTE_CA_B7_B20_B38-Core	REL-13	Dec.15	100	Nokia Networks	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006. CR to 36.133 not needed.
11.08.02.18	670274	LTE_CA_B7_B20_B38-Perf	REL-13	Dec.15	100	Nokia Networks	TS 36.307 CRs agreed in R4-157774, R4-157775, R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.
11.08.02.19	680179	LTE_CA_B7_B42_B42-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006.
11.08.02.19	680279	LTE_CA_B7_B42_B42-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.
11.08.02.20	660196	LTE_CA_B8_B42_B42-Core	REL-13	March 16	40	Softbank Mobile	MSD agreement and final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.20	660296	LTE_CA_B8_B42_B42-Perf	REL-13	March 16	40	Softbank Mobile	Final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.21	660197	LTE_CA_B28_B40_B40-Core	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-157773, R4-158006
11.08.02.21	660297	LTE_CA_B28_B40_B40-Perf	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-157774, R4-157775, R4-157776, R4-157777, R4-158007
11.08.02.22	680182	LTE_CA_B28_B41_B41-Core	REL-13	Dec.15	100	KDDI	R4-158006, R4-158446
11.08.02.22	680282	LTE_CA_B28_B41_B41-Perf	REL-13	Dec.15	100	KDDI	R4-157776, R4-157777, R4-158007
11.08.02.23	680183	LTE_CA_B28_B42_B42-Core	REL-13	Dec.15	100	KDDI	R4-158006, R4-158446
11.08.02.23	680283	LTE_CA_B28_B42_B42-Perf	REL-13	Dec.15	100	KDDI	R4-157776, R4-157777, R4-158007
11.08.03.01	670178	LTE_CA_B1_B3_B5_B40-Core	REL-13	Dec.15	100	SK Telecom	Approved CR:R4-157426
11.08.03.01	670278	LTE_CA_B1_B3_B5_B40-Perf	REL-13	Dec.15	100	SK Telecom	Approved CRs: R4-157429, R4-157430
11.08.03.02	670179	LTE_CA_B1_B3_B7_B8-Core	REL-13	Dec.15	100	Nokia Networks	CR for core part, TS36.101 CR3338 and TS36.104 CR0733, are approved in RAN4. tdoc# are R4-1547426 and R4-158008. (UE tx/rx relaxation and MSD are approved in TP (R4-157358) to TR36.854-13 during RAN4#77.)

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.03.02	670279	LTE_CA_B1_B3_B7_B8-Perf	REL-13	Dec.15	100	Nokia Networks	CRs for performance part, TS36.141 CR0813, TS36.307 CR0601, CR0602, CR0603 and 0604 are approved in RAN4#77. tdoc# are R4-158009, R4-157427, R4-157428, R4-157429 and R4-157430.
11.08.03.03	690182	LTE_CA_B1_B3_B8_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157426, R4-158008
11.08.03.03	690282	LTE_CA_B1_B3_B8_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-158009, R4-157429 , R4-157430
11.08.03.04	680186	LTE_CA_B1_B3_B19_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.04	680286	LTE_CA_B1_B3_B19_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.
11.08.03.05	680187	LTE_CA_B1_B3_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.05	680287	LTE_CA_B1_B3_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.
11.08.03.06	680190	LTE_CA_B1_B19_B21_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.06	680290	LTE_CA_B1_B19_B21_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.
11.08.03.07	680188	LTE_CA_B1_B19_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.07	680288	LTE_CA_B1_B19_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.
11.08.03.08	680191	LTE_CA_B1_B21_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.08	680291	LTE_CA_B1_B21_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.
11.08.03.09	670177	LTE_CA_B2_B2_B4_B4-Core	REL-13	Dec.15	100	Nokia Networks	BS CR 36.104 R4-152732 BS CR 36.141 R4-152733 UE CR 36.101 R4-153921 UE RRM 36.133 R4-157511
11.08.03.09	670277	LTE_CA_B2_B2_B4_B4-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-153796 Release independence REL-12 CR R4-153797 Release independence REL-13 CR R4-153798
11.08.03.10	680194	LTE_CA_B2_B2_B4_B5-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.10	680294	LTE_CA_B2_B2_B4_B5-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.11	670176	LTE_CA_B2_B2_B4_B12-Core	REL-13	Dec.15	100	Nokia Networks	BS CR 36.104 R4-152732 BS CR 36.141 R4-152733 UE CR 36.101 R4-153921 UE RRM 36.133 R4-157511
11.08.03.11	670276	LTE_CA_B2_B2_B4_B12-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-153796 Release independence REL-12 CR R4-153797 Release independence REL-13 CR R4-153798
11.08.03.12	681100	LTE_CA_B2_B2_B5_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.03.12	681200	LTE_CA_B2_B2_B5_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.13	661104	LTE_CA_B2_B2_B5_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.13	661204	LTE_CA_B2_B2_B5_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.14	680195	LTE_CA_B2_B2_B12_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.14	680295	LTE_CA_B2_B2_B12_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.15	661103	LTE_CA_B2_B2_B12_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.15	661203	LTE_CA_B2_B2_B12_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.16	661105	LTE_CA_B2_B2_B29_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.16	661205	LTE_CA_B2_B2_B29_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.17	670175	LTE_CA_B2_B4_B4_B12-Core	REL-13	Dec.15	100	Nokia Networks	BS CR 36.104 R4-152732 BS CR 36.141 R4-152733 UE CR 36.101 R4-153921 UE RRM 36.133 R4-157511
11.08.03.17	670275	LTE_CA_B2_B4_B4_B12-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-153796 Release independence REL-12 CR R4-153797 Release independence REL-13 CR R4-153798
11.08.03.18	680193	LTE_CA_B2_B4_B5_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.18	680293	LTE_CA_B2_B4_B5_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.19	670180	LTE_CA_B2_B4_B5_B29-Core	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-155368, R4-155072. Way forward on measurement requirements for 3rd and 4th activated SCells agreed in R4-157511.
11.08.03.19	670280	LTE_CA_B2_B4_B5_B29-Perf	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-154084, R4-154085, R4-155371, R4-155372, R4-155073
11.08.03.20	661107	LTE_CA_B2_B4_B5_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.20	661207	LTE_CA_B2_B4_B5_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.21	680185	LTE_CA_B2_B4_B7_B12-Core	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.03.21	680285	LTE_CA_B2_B4_B7_B12-Perf	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.22	661106	LTE_CA_B2_B4_B12_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.22	661206	LTE_CA_B2_B4_B12_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.23	661108	LTE_CA_B2_B4_B29_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.23	661208	LTE_CA_B2_B4_B29_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.24	681101	LTE_CA_B2_B5_B12_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.24	681201	LTE_CA_B2_B5_B12_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.25	690185	LTE_CA_B3_B7_B7_B28-Core	REL-13	Dec.15	100	Telstra	Agreed CR:R4-157426
11.08.03.25	690285	LTE_CA_B3_B7_B7_B28-Perf	REL-13	Dec.15	100	Telstra	Agreed CRs: R4-157428, R4-157429, R4-157430
11.08.03.26	680189	LTE_CA_B3_B19_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.26	680289	LTE_CA_B3_B19_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.
11.08.03.27	690183	LTE_CA_B3_B28_B40_B40-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-157426 TS36.104 CR agreed in R4-158008
11.08.03.27	690283	LTE_CA_B3_B28_B40_B40-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157429, R4-157430 TS 36.141 CR agreed in R4-158009
11.08.03.28	680196	LTE_CA_B4_B4_B5_B30-Core	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.28	680296	LTE_CA_B4_B4_B5_B30-Perf	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.29	680197	LTE_CA_B4_B4_B12_B30-Core	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.29	680297	LTE_CA_B4_B4_B12_B30-Perf	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.30	680198	LTE_CA_B4_B4_B29_B30-Core	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.30	680298	LTE_CA_B4_B4_B29_B30-Perf	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.03.31	680192	LTE_CA_B19_B21_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.31	680292	LTE_CA_B19_B21_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.
11.08.03.32	661109	LTE_CA_B25_B41_B41_B41-Core	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.101 CR agreed in R4-153921; TS 36.104 CR agreed in R4-152732; TS 36.133 CRs agreed in R4-152980, R4-153683. Way forward on measurement requirements for 3rd and 4th activated SCells agreed in R4-157511.
11.08.03.32	661209	LTE_CA_B25_B41_B41_B41-Perf	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.307 CRs agreed in R4-153796, R4-153797, R4-153798; TS 36.141 CR agreed in R4-152733.
11.08.03.33	690184	LTE_CA_B28_B40_B40_B40-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-157426
11.08.03.33	690284	LTE_CA_B28_B40_B40_B40-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157429, R4-157430
11.08.03.34	690179	LTE_CA_B39_B39_B41_B41-Core	REL-13	Dec.15	100	CMCC	TS36.101 CR agreed in R4-157426
11.08.03.34	690279	LTE_CA_B39_B39_B41_B41-Perf	REL-13	Dec.15	100	CMCC	TS 36.307 CRs agreed in R4-157427 , R4-157428, R4-157429, R4-157430
11.08.03.35	690178	LTE_CA_B39_B41_B41_B41-Core	REL-13	Dec.15	100	CMCC	TS36.101 CR agreed in R4-157426
11.08.03.35	690278	LTE_CA_B39_B41_B41_B41-Perf	REL-13	Dec.15	100	CMCC	TS 36.307 CRs agreed in R4-157427 , R4-157428, R4-157429, R4-157430
11.08.03.36	680184	LTE_CA_B41_B41_B42_B42-Core	REL-13	Dec.15	100	ZTE	TS 36.101 CR agreed in157426.
11.08.03.36	680284	LTE_CA_B41_B41_B42_B42-Perf	REL-13	Dec.15	100	ZTE	TS 36.307 CRs agreed in R4-157427, R4-157428, R4-157429, R4-157430.
11.08.04.1	690191	LTE_CA_B1_B3_B7_B7_B28-Core	REL-13	March 16	95	Telstra	All requirements ready except for the generic MSD values for Band 1 and Band 28 to be included. CA combination will be included in Big CRs in next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.04.1	690291	LTE_CA_B1_B3_B7_B7_B28-Perf	REL-13	March 16	95	Telstra	All requirements ready and approved in a TR. CA combination will be included in Big CRs in next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.04.2	690189	LTE_CA_B1_B3_B19_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CR for TS36.101 (R4-157346) was agreed in RAN4#77. CR for TS36.104 is not nessesary since this combination is already captured in this spec. CRs for TS36.133 (R4-158375, R4-158373) were agreed in RAN4#77.
11.08.04.2	690289	LTE_CA_B1_B3_B19_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CRs for TS36.307(R4-157348, R4-157349) were agreed in RAN4#77. CR for TS36.141 is not nessesary since this combination is already captured in this spec. CR for TS36.133 (R4-155648) was agreed in RAN4#77.

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.04.3	690190	LTE_CA_B1_B19_B21_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CR for TS36.101 (R4-157346) was agreed in RAN4#77. CR for TS36.104 is not nessesary since this combination is already captured in this spec. CRs for TS36.133 (R4-158375, R4-158373) were agreed in RAN4#77.
11.08.04.3	690290	LTE_CA_B1_B19_B21_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CRs for TS36.307(R4-157348, R4-157349) were agreed in RAN4#77. CR for TS36.141 is not nessesary since this combination is already captured in this spec. CR for TS36.133 (R4-155648) was agreed in RAN4#77.
11.08.04.4	690192	LTE_CA_B3_B3_B7_B7_B28-Core	REL-13	March 16	95	Telstra	All requirements ready and approved in a TR. CA combination will be included in Big CRs in the next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.04.4	690292	LTE_CA_B3_B3_B7_B7_B28-Perf	REL-13	March 16	95	Telstra	All requirements ready and approved in a TR. CA combination will be included in Big CRs in next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.05.1	661110	LTE_CA_2UL_R13-A1-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CRs agreed in R4-155825, R4-157045.
11.08.05.1	661210	LTE_CA_2UL_R13-A1-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-156028, R4-155828, R4-157046, R4-157047.
11.08.05.2	661111	LTE_CA_2UL_R13-A2-Core	REL-13	Dec.15	100	Qualcomm	Core specifications for CA_1A-28A combination have already been endorsed. No further work is required in Rel-13 to complete this WI.
11.08.05.2	661211	LTE_CA_2UL_R13-A2-Perf	REL-13	Dec.15	100	Qualcomm	Release independent specifications for CA_1A-28A combination have already been endorsed. No further work is required in Rel-13 to complete this WI.
11.08.05.3	661112	LTE_CA_2UL_R13-A3-Core	REL-13	Dec.15	100	Ericsson	CA_18A-28A (only combination in WID after RAN#67) completed and included in agreed CR to 36.101 (R4-153755). No other band combination proposed for Rel-13. GNSS protection: LS received from RAN2 on IDC enhancements for UL CA operations introduced from Rel-11. No further action expected from RAN4 at this stage.
11.08.05.3	661212	LTE_CA_2UL_R13-A3-Perf	REL-13	Dec.15	100	Ericsson	CA_18A-28A (only combination in WID after RAN#67) completed and included in agreed CR (R4-153266). No other band combination proposed for Rel-13.
11.08.05.4	670182	LTE_CA_2UL_R13-A4-Core	REL-13	Dec.15	100	Nokia Networks	UE CR 36.101 R4-155825
11.08.05.4	670282	LTE_CA_2UL_R13-A4-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence R4-155828, R4-155829 and R4-156028

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.05.5	670181	LTE_CA_2UL_FDD_TDD-Core	REL-13	Dec.15	100	KDDI	NONE (CRs were already approved in RAN#69 and no new combination had been introduced between RAN#69 and RAN#70 and WI can be closed.)
11.08.05.5	670281	LTE_CA_2UL_FDD_TDD-Perf	REL-13	Dec.15	100	KDDI	NONE (CRs were already approved in RAN#69 and no new combination had been introduced between RAN#69 and RAN#70 and WI can be closed.)
11.08.06.1	670183	LTE_CA_3DL_2UL-Core	REL-13	Dec.15	100	Nokia Networks	UE CR 36.101 R4-158263
11.08.06.1	670283	LTE_CA_3DL_2UL-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence R4-157405 and R4-157406
11.08.06.2	681102	LTE_CA_3DL_2UL_inter_intra-Core	REL-13	Dec.15	100	Nokia Networks	TP to 3DL/2UL TR 36.879-13 agreed in R4-156524 TP to 3DL/2UL TR 36.879-13 agreed in R4-156525 BS CR 36.101 R4-157873
11.08.06.2	681202	LTE_CA_3DL_2UL_inter_intra-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-157837 Release independence REL-12 CR R4-157868 Release independence REL-13 CR R4-157871
11.08.07.1	690194	LTE_CA_3DL3UL_B39_B39_B41-Core	REL-13	Dec.15	100	CATT	Agreed CR： R4-158317, R4-158374
11.08.07.1	690294	LTE_CA_3DL3UL_B39_B39_B41-Perf	REL-13	Dec.15	100	CATT	Agreed CR： R4-157235, R4-157236
11.08.07.2	690193	LTE_CA_3DL3UL_B39_B41_B41-Core	REL-13	Dec.15	100	CATT	CRs agreed: R4-158317
11.08.07.2	690293	LTE_CA_3DL3UL_B39_B41_B41-Perf	REL-13	Dec.15	100	CATT	CRs agreed: R4-147235, R4-157236
11.08.08.1	681103	LTE_CA_C_B5-Core	REL-13	Dec.15	100	Intel	CR TS 36.101 agreed in R4-158254; CR TS 36.104 agreed in R4-156968
11.08.08.1	681203	LTE_CA_C_B5-Perf	REL-13	Dec.15	100	Intel	CR TS 36.141 agreed in R4-156969; CR TS 36.307 agreed in R4-156970, R4-158255, R4-158256 and R4-158257
11.08.08.2	670185	LTE_CA_C_B8-Core	REL-13	Dec.15	100	CMCC	TS 36.101 CR agreed in R4-156784 TS 36.104 CR agreed in R4-155981
11.08.08.2	670285	LTE_CA_C_B8-Perf	REL-13	Dec.15	100	CMCC	TS 36.307 CRs agreed in R4-155983 , R4-155984, R4-155985,R4-155986 TS 36.141 CR agreed in R4-155982.
11.08.09.1	681105	LTE_CA_NC_B5-Core	REL-13	Dec.15	100	Intel	CR TS 36.101 agreed in R4-156971; CR TS 36.104 agreed in R4-156972
11.08.09.1	681205	LTE_CA_NC_B5-Perf	REL-13	Dec.15	100	Intel	CR TS 36.141 agreed in R4-156973; CR TS 36.307 agreed in R4-156974, R4-158259 and R4-158260
11.08.09.2	690195	LTE_CA_NC_B7_BWset-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR R4-157432 was agreed
11.08.09.2	690295	LTE_CA_NC_B7_BWset-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs TS R4-157433 and R4-157434 were agreed
11.08.10.1	670186	LTE_CA_C_B42_4DL-Core	REL-13	Dec.15	100	CATT	CRs agreed: R4-156793, R4-157450
11.08.10.1	670286	LTE_CA_C_B42_4DL-Perf	REL-13	Dec.15	100	CATT	CRs agreed: R4-155480, R4-157218, R4-156844

RAN #70 agenda	UID	Acronym	REL	target after RAN #70	% complete	rapporteur	Open issues / Other notes
11.08.11.1	661113	LTE_CA_NC_B41_4DL-Core	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.101 CR agreed in R4-158261. Way forward on measurement requirements for 3rd and 4th activated SCells agreed in R4-157511.
11.08.11.1	661213	LTE_CA_NC_B41_4DL-Perf	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.307 CRs agreed in R4-157860, R4-157861 and R4-157862.
11.08.11.2	681106	LTE_CA_NC_B42_4DL-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-157589
11.08.11.2	681206	LTE_CA_NC_B42_4DL-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-155510, R4-155511, R4-155512,
12.1.1	690180	LTE_CA_B4_B4_B5_B12-Core	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.
12.1.1	690280	LTE_CA_B4_B4_B5_B12-Perf	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.
12.1.2	690181	LTE_CA_B2_B4_B4_B5-Core	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.
12.1.2	690281	LTE_CA_B2_B4_B4_B5-Perf	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.
12.1.3	690186	LTE_CA_B4_B5_B12_B12-Core	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped
12.1.3	690286	LTE_CA_B4_B5_B12_B12-Perf	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped
12.1.4	690187	LTE_CA_B4_B4_B12_B12-Core	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped
12.1.4	690287	LTE_CA_B4_B4_B12_B12-Perf	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped
12.1.5	690188	LTE_CA_B2_B4_B12_B12-Core	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped
12.1.5	690288	LTE_CA_B2_B4_B12_B12-Perf	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped

RP-152155 CR for clearification of band combination in 36.133 RAN4 CR Pack Rel-13
LTE_CA_3DL3UL_B39_B39_B41, LTE_CA_3DL3UL_B39_B41_B41, LTE_CA_B1_B19_B21_B42_B42-Core, LTE_CA_B1_B3_B19_B42_B42-Core, LTE_CA_B1_B3_B7_B7_B28-Core, LTE_CA_B2_B2_B12_B30-Core, LTE_CA_B2_B2_B29_B30-Core, LTE_CA_B2_B2_B4_B12-Core, LTE_CA_B2_B2_B4_B4-Core, LTE_CA_B2_B2_B5_B30-Core, LTE_CA_B2_B4_B12_B30-Core, LTE_CA_B2_B4_B29_B30-Core, LTE_CA_B2_B4_B4_B12-Core, LTE_CA_B2_B4_B5_B29-Core, LTE_CA_B2_B4_B5_B30-Core, LTE_CA_B25_B41_B41_B41-Core, LTE_CA_B3_B3_B7_B7_B28-Core, LTE_CA_C_B42_4DL-Core, LTE_CA_NC_B41_4DL-Core

conclusion: approved

11.8.1 Inter-band CA related WIs (2DL/1UL)

RP-152156 Inter-band CA related WIs (2DL/1UL) RAN4 CR Pack Rel-13 LTE_CA_B1_B40-Core, LTE_CA_B20_B40-Core, LTE_CA_B20_B40-Perf, LTE_CA_B3_B41-Core, LTE_CA_B3_B41-Perf, LTE_CA_B5_B38-Core, LTE_CA_B5_B38-Perf
conclusion: approved

11.8.1.1 LTE Advanced inter-band CA of Band 1 and Band 40 [LTE_CA_B1_B40]

11.08.01.1	650141	LTE_CA_B1_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157768 , R4-153757
11.08.01.1	650241	LTE_CA_B1_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-153758, R4-153935, R4-153936

No contributions

Core and Perf. part WI completed

11.8.1.2 LTE Advanced inter-band CA of Band 3 and Band 41 [LTE_CA_B3_B41]

11.08.01.2	660182	LTE_CA_B3_B41-Core	REL-13	Dec.15	100	China Telecom	TS 36.101 CR agreed in R4-157768. TS 36.104 CR agreed in R4-158004.
11.08.01.2	660282	LTE_CA_B3_B41-Perf	REL-13	Dec.15	100	China Telecom	TS 36.307 CRs agreed in R4-157771, R4-157772. TS 36.141 CR agreed in R4-158005.

No contributions

Core and Perf. part WI completed

11.8.1.3 LTE Advanced inter-band CA for Band 5 and Band 38 [**New WI:** LTE_CA_B5_B38]

11.08.01.3	690173	LTE_CA_B5_B38-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR agreed in R4-157768. TS 36.104 CR agreed in R4-158004.
11.08.01.3	690273	LTE_CA_B5_B38-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157771, R4-157772. TS 36.141 CR agreed in R4-158005.

No contributions

Core and Perf. part WI completed

11.8.1.4 LTE Advanced inter-band CA of Band 8 and Band 27 [LTE_CA_B8_B27]

11.08.01.4	620123	LTE_CA_B8_B27-Core	REL-13	Dec.15	30	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped
11.08.01.4	620223	LTE_CA_B8_B27-Perf	REL-13	Dec.15	30	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped

No contributions

WIs LTE_CA_B8_B27-Core and LTE_CA_B8_B27-Perf are stopped at RAN #70.

11.8.1.5 LTE Advanced inter-band CA of Band 20 and Band 40 [LTE_CA_B20_B40]

11.08.01.5	650140	LTE_CA_B20_B40-Core	REL-13	Dec.15	100	Ericsson	TS 36.101 CR agreed in R4-157768. TS 36.104 CR agreed in R4-158004.
11.08.01.5	650240	LTE_CA_B20_B40-Perf	REL-13	Dec.15	100	Ericsson	TS 36.307 CRs agreed in R4-157771, R4-157772. TS 36.141 CR agreed in R4-158005.

No contributions

Core and Perf. part WI completed

11.8.1.6 European 700 Supplemental Downlink band (738-758 MHz) in E-UTRA and LTE CA (2DL/1UL) with Band 20 [LTE_CA_700EU_B20]

11.08.01.6	680175	LTE_CA_700EU_B20-Core	REL-13	Dec.15	100	TeliaSonera	CRs were agreed in RAN4#76bis, R4-156796, -6890, -6891, -6561, -6099, -6100, -6102, -6490, -6101. R3 CRs agreed in R3-152682, -2436)
11.08.01.6	680275	LTE_CA_700EU_B20-Perf	REL-13	Dec.15	100	TeliaSonera	CRs were agreed in RAN4#76bis, R4-156848, -5894…-5896, -6892, -6893, -6562

RP-152044 Revised WID for European 700 Supplemental Downlink band (738-758 MHz) in E-UTRA and LTE Carrier Aggregation (2DL/1UL) with Band 20 TeliaSonera WID revised RAN4 s (2DL/1UL) Rel-13 LTE_CA_700EU_B20
last approved WID: RP-151228
conclusion: approved

RP-152104 RAN3 CRs for European 700 Supplemental Downlink band RAN3 CR Pack Rel-13 LTE_CA_700EU_B20-Core
conclusion: approved

RP-152157 European 700 Supplemental Downlink band (738-758 MHz) in E-UTRA and LTE Carrier Aggregation (2DL/1UL) with Band 20 RAN4 CR Pack Rel-13 LTE_CA_700EU_B20-Core, LTE_CA_700EU_B20-Perf
conclusion: approved

RP-152042 TR 36.895 v1.0.0 on European 700 Supplemental Downlink band (738-758 MHz) in E-UTRA TeliaSonera draft TR 36.895 RAN4 Rel-13 LTE_CA_700EU_B20-Core
RAN4 TR 36.895 submitted for 1-step approval;
conclusion: revised in RP-152194 to align with drafting rules

RP-152194 TR 36.895 v1.0.1 on European 700 Supplemental Downlink band (738-758 MHz) in E-UTRA TeliaSonera draft TR 36.895 RAN4 Rel-13 LTE_CA_700EU_B20-Core
revision of RP-152042; RAN4 TR 36.895 submitted for 1-step approval
conclusion: revised in RP-152240

RP-152240 TR 36.895 v1.1.0 on European 700 Supplemental Downlink band (738-758 MHz) in E-UTRA TeliaSonera draft TR 36.895 RAN4 Rel-13 LTE_CA_700EU_B20-Core
RAN4 TR 36.895 submitted for 1-step approval;
conclusion: TR 36.895 is approved as v13.0.0

Core and Perf. part WI are completed

11.8.2 3 Band Carrier Aggregation (3DL/1UL)

RP-152161 3 Band Carrier Aggregation (3DL/1UL) RAN4 CR Pack Rel-13 LTE_CA_B1_B11_B18-Core, LTE_CA_B1_B11_B18-Core, LTE_CA_B1_B11_B18-Perf, LTE_CA_B1_B3_B40-Core, LTE_CA_B1_B3_B40-Perf, LTE_CA_B1_B3_B7-Core, LTE_CA_B1_B3_B7-Perf, LTE_CA_B1_B8_B40-Core, LTE_CA_B1_B8_B40-Perf, LTE_CA_B28_B40_B40-Core, LTE_CA_B28_B40_B40-Perf, LTE_CA_B28_B41_B41-Core, LTE_CA_B28_B41_B41-Perf, LTE_CA_B28_B42_B42-Core, LTE_CA_B28_B42_B42-Perf, LTE_CA_B3_B41_B41-Core, LTE_CA_B3_B41_B41-Perf, LTE_CA_B3_B41_B42-Core, LTE_CA_B3_B41_B42-Perf, LTE_CA_B3_B7_B38-Core, LTE_CA_B3_B7_B38-Perf, LTE_CA_B3_B8_B40-Core, LTE_CA_B3_B8_B40-Perf, LTE_CA_B4_B4_B7_BWset-Core, LTE_CA_B4_B4_B7_BWset-Perf, LTE_CA_B4_B7_B12_BWset-Core, LTE_CA_B4_B7_B12_BWset-Perf, LTE_CA_B5_B40_B40-Core, LTE_CA_B5_B40_B40-Perf, LTE_CA_B7_B20_B38-Core, LTE_CA_B7_B20_B38-Perf, LTE_CA_B7_B42_B42-Core, LTE_CA_B7_B42_B42-Perf
conclusion: approved

RP-152176 Introduction of additional band combinations for 3DL inter-band CA RAN4 CR Pack Rel-13 LTE_CA_B1_B3_B7-Core, LTE_CA_B1_B3_B40-Core, LTE_A_B1_B8_B40-Core, LTE_CA_B1_B11_B18-Core, LTE_CA_B3_B7_B38-Core, LTE_CA_B3_B8_B40-Core,

LTE_CA_B3_B41_B41-Core, LTE_CA_B3_B41_B42-Core, LTE_CA_B4_B4_B7_BWset-Core, LTE_CA_B4_B7_B12_BWSet-Core, LTE_CA_B5_B40_B40-Core, LTE_CA_B7_B20_B38-Core, LTE_CA_B7_B42_B42-Core, LTE_CA_B28_B40_B40-Core, LTE_CA_B28_B41_B41-Core, LTE_CA_B28_B42_B42-Core
discussion: MCC: late submission; R4-158446: Big CR to introduce 3DL CA combinations; an error was discovered in the CR; company CR in RP-151972 to correct it;
conclusion: revised in RP-151972

RP-151972 Revision of the RAN4 approved R4-158446 (big CR 3DL 36.101) Ericsson CR36.101 3358 2 B Rel-13 LTE_CA_B1_B8_B40-Core, LTE_CA_B3_B8_B40-Core, LTE_CA_B28_B40_B40-Core, LTE_CA_B1_B3_B7-Core, LTE_CA_B4_B4_B7_BWset-Core, LTE_CA_B4_B7_B12_BWset-Core, LTE_CA_B7_B20_B38-Core, LTE_CA_B7_B42_B42-Core, LTE_CA_B3_B7_B38-Core, LTE_CA_B28_B41_B41-Core, LTE_CA_B28_B42_B42-Core, LTE_CA_B1_B11_B18-Core, LTE_CA_B5_B40_B40-Core, LTE_CA_B3_B41_B42-Core, LTE_CA_B3_B41_B41-Core
company CR; CR is replacing RAN4 agreed CR R4-158446 (corrects typo, bandwidth for 1A-3A-40A and 1A-8A-40A and corrects that the fallback 8A-28A was included) of RP-152176
discussion: MCC: RP-152176 is under AI 11.8.2 but for open WIs; moved from AI 11.4.2 to AI 11.8.2
conclusion: approved

11.8.2.1 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 3 and Band 7

[LTE_CA_B1_B3_B7]

11.08.02.01	661100	LTE_CA_B1_B3_B7-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-158446 TS36.104 CR agreed in R4-158006
11.08.02.01	661200	LTE_CA_B1_B3_B7-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157774, R4-157775, R4-157776, R4-157777 TS 36.141 CR agreed in R4-158007

No contributions

Core and Perf. part WI completed

11.8.2.2 LTE Advanced 3 band CA (3DL/1UL) of Band 1, Band 3 and Band 40

[LTE_CA_B1_B3_B40]

11.08.02.02	660190	LTE_CA_B1_B3_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157773 R4-158006
11.08.02.02	660290	LTE_CA_B1_B3_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-158007, R4-157776, R4-157777

No contributions

Core and Perf. part WI completed

11.8.2.3 LTE Advanced 3 band CA (3DL/1UL) of Band 1, Band 8 and Band 28

[LTE_CA_B1_B8_B28]

11.08.02.03	660187	LTE_CA_B1_B8_B28-Core	REL-13	March 16	40	Softbank Mobile	Delta Tib, Rib agreement and final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.03	660287	LTE_CA_B1_B8_B28-Perf	REL-13	March 16	40	Softbank Mobile	Final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-151719 Work item exception for LTE Advanced 3 band Carrier Aggregation (3DL/1UL) of Band 1, Band 8 and Band 28 SoftBank Corp. WI exception request RAN4 s (3DL/1UL) Rel-13 LTE_CA_B1_B8_B28-Core
conclusion: approved

11.8.2.4 LTE Advanced 3 band CA (3DL/1UL) of Band 1, Band 8 and Band 40

[LTE_CA_B1_B8_B40]

11.08.02.04	660191	LTE_CA_B1_B8_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157773, R4-158006

11.08.02.04	660291	LTE_CA_B1_B8_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-158007, R4-157776, R4-157777

No contributions

Core and Perf. part WI completed

11.8.2.5 LTE Advanced 3 Band CA (3DL/1UL) of Band 1, Band 11 and Band 18

[**New WI**: LTE_CA_B1_B11_B18]

11.08.02.05	690174	LTE_CA_B1_B11_B18-Core	REL-13	Dec.15	100	KDDI	R4-158006, R4-158446
11.08.02.05	690274	LTE_CA_B1_B11_B18-Perf	REL-13	Dec.15	100	KDDI	R4-157774, R4-157775, R4-157776, R4-157777, R4-158007

No contributions

Core and Perf. part WI completed

11.8.2.6 LTE Advanced 3 Band CA (3DL/1UL) of Band 2, Band 4 and Band 7

[LTE_CA_B2_B4_B7]

11.08.02.06	670173	LTE_CA_B2_B4_B7-Core	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.06	670273	LTE_CA_B2_B4_B7-Perf	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-152020 Work item exception for LTE Advanced 3 band Carrier Aggregation (3DL/1UL) of Band 2, Band 4 and Band 7 Rogers CommunicationsWI exception request RAN4 s (3DL/1UL) Rel-13 LTE_CA_B2_B4_B7-Core
conclusion: approved

RP-151782 Revised WI: LTE Advanced 3 Band Carrier Aggregation (3DL/1UL) of Band 2, Band 4 and Band 7 Rogers CommunicationsWID revised RAN4 s (3DL/1UL) Rel-13 LTE_CA_B2_B4_B7
last approved WID: RP-150432; completion date postponed to March 16
conclusion: approved

11.8.2.7 LTE Advanced 3 Band CA (3DL/1UL) of Band 2, Band 7 and Band 12

[LTE_CA_B2_B7_B12]

11.08.02.07	670172	LTE_CA_B2_B7_B12-Core	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.07	670272	LTE_CA_B2_B7_B12-Perf	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-152021 Work item exception for LTE Advanced 3 band Carrier Aggregation (3DL/1UL) of Band 2, Band 7 and Band 12 Rogers CommunicationsWI exception request RAN4 s (3DL/1UL) Rel-13 LTE_CA_B2_B7_B12-Core
conclusion: approved

RP-151785 Revised WI: LTE Advanced 3 Band Carrier Aggregation (3DL/1UL) of Band 2, Band 7 and Band 12 Rogers CommunicationsWID revised RAN4 s (3DL/1UL) Rel-13 LTE_CA_B2_B7_B12
last approved WID: RP-150431; completion date postponed to March 16
conclusion: approved

11.8.2.8 LTE Advanced 3 Band CA (3DL/1UL) for Band 3, Band 7 and Band 38

[LTE_CA_B3_B7_B38]

11.08.02.08	680181	LTE_CA_B3_B7_B38-Core	REL-13	Dec.15	100	Nokia Networks	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006.

11.08.02.08	680281	LTE_CA_B3_B7_B38-Perf	REL-13	Dec.15	100	Nokia Networks	TS 36.307 CRs agreed in R4-157774, R4-157775, R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.

No contributions

Core and Perf. part WI completed

11.8.2.9 LTE Advanced 3 Band CA (3DL/1UL) for Band 3, Band 8 and Band 27
[LTE_CA_B3_B8_B27]

11.08.02.09	620132	LTE_CA_B3_B8_B27-Core	REL-13	Dec.15	25	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped
11.08.02.09	620232	LTE_CA_B3_B8_B27-Perf	REL-13	Dec.15	25	KT	Request to stop WI. We will re-open WI when the B8+B27 filter performance is acceptable => WI stopped

No contributions

WIs LTE_CA_B3_B8_B27-Core and LTE_CA_B3_B8_B27-Perf are stopped at RAN #70.

11.8.2.10 LTE Advanced 3 band CA (3DL/1UL) of Band 3, Band 8 and Band 28
[LTE_CA_B3_B8_B28]

11.08.02.10	660195	LTE_CA_B3_B8_B28-Core	REL-13	March 16	40	Softbank Mobile	Delta Tib, Rib agreement and final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.10	660295	LTE_CA_B3_B8_B28-Perf	REL-13	March 16	40	Softbank Mobile	Final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-151720 Work item exception for LTE Advanced 3 band Carrier Aggregation (3DL/1UL) of Band 3, Band 8 and Band 28 SoftBank Corp. WI exception request RAN4 s (3DL/1UL) Rel-13 LTE_CA_B3_B8_B28-Core
conclusion: approved

11.8.2.11 LTE Advanced 3 band CA (3DL/1UL) of Band 3, Band 8 and Band 40
[LTE_CA_B3_B8_B40]

11.08.02.11	660192	LTE_CA_B3_B8_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157773 R4-155070
11.08.02.11	660292	LTE_CA_B3_B8_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-155071, R4-154532, R4-154533

No contributions

Core and Perf. part WI completed

11.8.2.12 LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 20 and Band 32
[LTE_CA_B3_B20_B32]

11.08.02.12	680178	LTE_CA_B3_B20_B32-Core	REL-13 => REL-14	March 16	50	Ericsson	ΔTIB and ΔRIB values needs to be defined. Proponent should provide the exception sheet to keep the WI in Rel-13. => no exception provided, WI shifted to REL-14
11.08.02.12	680278	LTE_CA_B3_B20_B32-Perf	REL-13 => REL-14	March 16	50	Ericsson	ΔTIB and ΔRIB values needs to be defined. Proponent should provide the exception sheet to keep the WI in Rel-13. => no exception provided, WI shifted to REL-14

No contributions

WIs are not completed in Dec.15 (=freeze of REL-13), no REL-13 exception request sheet was provided to RAN #70, target dates were shifted into REL-14 period (March 16) => WIs are shifted from REL-13 to REL-14 (no possibility to come back to REL-13)

Although all REL-14 CA combinations shall be covered in basket CA WIs, LTE_CA_B3_B20_B32-Core and LTE_CA_B3_B20_B32-Perf will be kept open as separate WIs in REL-14 so far but they have to be integrated into REL-14 basket WIs at RAN #71.

Note: No REL-14 specs will be introduced at March 16 (which is supposed to be the freeze of REL-13 ASN.1).

11.8.2.13 LTE Advanced 3 Band CA (3DL/1UL) of Band 3, Band 41, and Band 41

[**New WI**: LTE_CA_B3_B41_B41]

11.08.02.13	690177	LTE_CA_B3_B41_B41-Core	REL-13	Dec.15	100	ZTE	TS 36.101 CR agreed in R4-158446.
11.08.02.13	690277	LTE_CA_B3_B41_B41-Perf	REL-13	Dec.15	100	ZTE	TS 36.307 CRs agreed in R4-157776, R4-157777.

No contributions

Core and Perf. part WI completed

11.8.2.14 LTE Advanced 3 Band CA (3DL/1UL) for Band 3, Band 41 and Band 42

[**New WI**: LTE_CA_B3_B41_B42]

11.08.02.14	690176	LTE_CA_B3_B41_B42-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006.
11.08.02.14	690276	LTE_CA_B3_B41_B42-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.

RP-151817 Revised WID: LTE Advanced 3 Band Carrier Aggregation (3DL/1UL) for Band 3, Band 41 and Band 42 Huawei, HiSilicon WID revised RAN4 s (3DL/1UL) Rel-13 LTE_CA_B3_B41_B42
last approved WID: RP-151365; channel bandwidth deleted which is not aligned with the fall back mode
conclusion: approved

Core and Perf. part WI completed

11.8.2.15 Additional bandwidth combination set for LTE Advanced 3 Band CA (3DL/1UL) of Band 4, Band 4 and Band 7 [LTE_CA_B4_B4_B7_BWset]

11.08.02.15	670170	LTE_CA_B4_B4_B7_BWset-Core	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007
11.08.02.15	670270	LTE_CA_B4_B4_B7_BWset-Perf	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007

No contributions

Core and Perf. part WI completed

11.8.2.16 Additional bandwidth combination set for LTE Advanced 3 Band CA (3DL/1UL) of Band 4, Band 7 and Band 12 [LTE_CA_B4_B7_B12_BWset]

11.08.02.16	670171	LTE_CA_B4_B7_B12_BWset-Core	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007
11.08.02.16	670271	LTE_CA_B4_B7_B12_BWset-Perf	REL-13	Dec.15	100	Rogers Communications	No input fro rapporteur but combination is included in big CRs R4-158446, -7774…-7777, -8006, -8007

No contributions

Core and Perf. part WI completed

11.8.2.17 LTE Advanced 3 Band CA (3DL/1UL) of Band 5, Band 40, and Band 40

[**New WI**: LTE_CA_B5_B40_B40]

11.08.02.17	690175	LTE_CA_B5_B40_B40-Core	REL-13	Dec.15	100	ZTE	TS 36.101 CR agreed in R4-158446.
11.08.02.17	690275	LTE_CA_B5_B40_B40-Perf	REL-13	Dec.15	100	ZTE	TS 36.307 CRs agreed in R4-157776, R4-157777.

No contributions

Core and Perf. part WI completed

11.8.2.18 LTE Advanced 3 Band CA (3DL/1UL) of Band 7, Band 20 and Band 38

[LTE_CA_B7_B20_B38]

11.08.02.18	670174	LTE_CA_B7_B20_B38-Core	REL-13	Dec.15	100	Nokia Networks	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006. CR to 36.133 not needed.
11.08.02.18	670274	LTE_CA_B7_B20_B38-Perf	REL-13	Dec.15	100	Nokia Networks	TS 36.307 CRs agreed in R4-157774, R4-157775, R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.

No contributions

Core and Perf. part WI completed

11.8.2.19 LTE Advanced 3 Band CA (3DL/1UL) for Band 7, Band 42 and Band 42

[LTE_CA_B7_B42_B42]

11.08.02.19	680179	LTE_CA_B7_B42_B42-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR agreed in R4-158446. TS 36.104 CR agreed in R4-158006.
11.08.02.19	680279	LTE_CA_B7_B42_B42-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157776, R4-157777. TS 36.141 CR agreed in R4-158007.

No contributions

Core and Perf. part WI completed

11.8.2.20 LTE Advanced 3 Band CA (3DL/1UL) of Band 8, Band 42 and Band 42

[LTE_CA_B8_B42_B42]

11.08.02.20	660196	LTE_CA_B8_B42_B42-Core	REL-13	March 16	40	Softbank Mobile	MSD agreement and final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.02.20	660296	LTE_CA_B8_B42_B42-Perf	REL-13	March 16	40	Softbank Mobile	Final TR/CR. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-151721 Work item exception for LTE Advanced 3 band Carrier Aggregation (3DL/1UL) of Band 8, Band 42 and Band 42SoftBank Corp. WI exception request RAN4 s (3DL/1UL) Rel-13 LTE_CA_B8_B42_B42-Core
conclusion: approved

11.8.2.21 LTE Advanced 3 Band CA (3DL/1UL) of Band 28, Band 40 and Band 40

[LTE_CA_B28_B40_B40]

11.08.02.21	660197	LTE_CA_B28_B40_B40-Core	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-157773, R4-158006
11.08.02.21	660297	LTE_CA_B28_B40_B40-Perf	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-157774, R4-157775, R4-157776, R4-157777, R4-158007

No contributions

Core and Perf. part WI completed

11.8.2.22 LTE Advanced 3 Band CA (3DL/1UL) of Band 28, Band 41 and Band 41
[LTE_CA_B28_B41_B41]

11.08.02.22	680182	LTE_CA_B28_B41_B41-Core	REL-13	Dec.15	100	KDDI	R4-158006, R4-158446
11.08.02.22	680282	LTE_CA_B28_B41_B41-Perf	REL-13	Dec.15	100	KDDI	R4-157776, R4-157777, R4-158007

No contributions

Core and Perf. part WI completed

11.8.2.23 LTE Advanced 3 Band CA (3DL/1UL) of Band 28, Band 42 and Band 42
[LTE_CA_B28_B42_B42]

11.08.02.23	680183	LTE_CA_B28_B42_B42-Core	REL-13	Dec.15	100	KDDI	R4-158006, R4-158446
11.08.02.23	680283	LTE_CA_B28_B42_B42-Perf	REL-13	Dec.15	100	KDDI	R4-157776, R4-157777, R4-158007

No contributions

Core and Perf. part WI completed

11.8.3 4 Band Carrier Aggregation (4DL/1UL)

RP-152162 4 Band Carrier Aggregation RAN4 CR Pack Rel-13 LTE_CA_B1_B19_B21_B42-Core, LTE_CA_B1_B3_B19_B42-Core, LTE_CA_B1_B3_B5_B40-Core, LTE_CA_B1_B3_B5_B40-Perf, LTE_CA_B1_B3_B7_B8-Core, LTE_CA_B1_B3_B7_B8-Perf, LTE_CA_B1_B3_B8_B40-Core, LTE_CA_B1_B3_B8_B40-Perf, LTE_CA_B2_B2_B12_B12-Core, LTE_CA_B2_B2_B12_B12-Perf, LTE_CA_B2_B2_B4_B5-Core, LTE_CA_B2_B2_B4_B5-Perf, LTE_CA_B2_B2_B5_B12-Core, LTE_CA_B2_B2_B5_B12-Perf, LTE_CA_B2_B4_B12_B30-Core, LTE_CA_B2_B4_B29_B30-Core, LTE_CA_B2_B4_B4_B5-Core, LTE_CA_B2_B4_B4_B5-Perf, LTE_CA_B2_B4_B5_B12-Core, LTE_CA_B2_B4_B5_B12-Perf, LTE_CA_B2_B4_B5_B29-Core, LTE_CA_B2_B4_B5_B29-Perf, LTE_CA_B2_B4_B5_B30-Core, LTE_CA_B2_B5_B12_B12-Core, LTE_CA_B2_B5_B12_B12-Perf, LTE_CA_B28_B40_B40_B40-Core, LTE_CA_B28_B40_B40_B40-Perf, LTE_CA_B3_B28_B40_B40-Core, LTE_CA_B3_B28_B40_B40-Perf, LTE_CA_B3_B7_B7_B28-Core, LTE_CA_B3_B7_B7_B28-Perf, LTE_CA_B39_B39_B41_B41-Core, LTE_CA_B39_B39_B41_B41-Perf, LTE_CA_B39_B41_B41_B41-Core, LTE_CA_B39_B41_B41_B41-Perf, LTE_CA_B4_B4_B5_B12-Core, LTE_CA_B4_B4_B5_B12-Perf, LTE_CA_B41_B41_B42_B42-Core, LTE_CA_B41_B41_B42_B42-Perf,
conclusion: approved

RP-151923 TR 36.854-13 v1.0.0 on LTE Advanced 4 Band Carrier Aggregation (4DL/1UL); Release 13 Nokia Networks draft TR 36.854-13 RAN4 Rel-13 LTE_CA_B2_B2_B5_B30-Core
RAN4 TR 36.854-13 submitted for information;
conclusion: revised in RP152195

RP-152195 TR 36.854-13 v1.1.0 on LTE Advanced 4 Band Carrier Aggregation (4DL/1UL); Release 13 Nokia Networks draft TR 36.854-13 RAN4 Rel-13 LTE_CA_B2_B2_B5_B30-Core
revision of RP-151923; RAN4 TR 36.854-13 submitted for information;
conclusion: noted

11.8.3.1 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 5 and Band 40
[LTE_CA_B1_B3_B5_B40]

11.08.03.01	670178	LTE_CA_B1_B3_B5_B40-Core	REL-13	Dec.15	100	SK Telecom	Approved CR:R4-157426
11.08.03.01	670278	LTE_CA_B1_B3_B5_B40-Perf	REL-13	Dec.15	100	SK Telecom	Approved CRs: R4-157429, R4-157430

No contributions

Core and Perf. part WI completed

11.8.3.2 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 7 and Band 8
[LTE_CA_B1_B3_B7_B8]

11.08.03.02	670179	LTE_CA_B1_B3_B7_B8-Core	REL-13	Dec.15	100	Nokia Networks	CR for core part, TS36.101 CR3338 and TS36.104 CR0733, are approved in RAN4. tdoc# are R4-1547426 and R4-158008. (UE tx/rx relaxation and MSD are approved in TP (R4-157358) to TR36.854-13 during RAN4#77.)
11.08.03.02	670279	LTE_CA_B1_B3_B7_B8-Perf	REL-13	Dec.15	100	Nokia Networks	CRs for performance part, TS36.141 CR0813, TS36.307 CR0601, CR0602, CR0603 and 0604 are approved in RAN4#77. tdoc# are R4-158009, R4-157427, R4-157428, R4-157429 and R4-157430.

No contributions

Core and Perf. part WI completed

11.8.3.3 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 8 and Band 40
[**New WI**: LTE_CA_B1_B3_B8_B40]

11.08.03.03	690182	LTE_CA_B1_B3_B8_B40-Core	REL-13	Dec.15	100	KT	Agreed CR: R4-157426, R4-158008
11.08.03.03	690282	LTE_CA_B1_B3_B8_B40-Perf	REL-13	Dec.15	100	KT	Agreed CR: R4-158009, R4-157429, R4-157430

No contributions

Core and Perf. part WI completed

11.8.3.4 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 19 and Band 42
[LTE_CA_B1_B3_B19_B42]

11.08.03.04	680186	LTE_CA_B1_B3_B19_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.04	680286	LTE_CA_B1_B3_B19_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.

No contributions

Core and Perf. part WI completed

11.8.3.5 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 3, Band 42 and Band 42
[LTE_CA_B1_B3_B42_B42]

11.08.03.05	680187	LTE_CA_B1_B3_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.05	680287	LTE_CA_B1_B3_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.

No contributions

Core and Perf. part WI completed

11.8.3.6 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 19, Band 21 and Band 42
[LTE_CA_B1_B19_B21_B42]

11.08.03.06	680190	LTE_CA_B1_B19_B21_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.06	680290	LTE_CA_B1_B19_B21_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.

No contributions

Core and Perf. part WI completed

11.8.3.7 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 19, Band 42 and Band 42
[LTE_CA_B1_B19_B42_B42]

11.08.03.07	680188	LTE_CA_B1_B19_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.07	680288	LTE_CA_B1_B19_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.

No contributions

Core and Perf. part WI completed

11.8.3.8 LTE Advanced 4 Band CA (4DL/1UL) of Band 1, Band 21, Band 42 and Band 42
[LTE_CA_B1_B21_B42_B42]

11.08.03.08	680191	LTE_CA_B1_B21_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.08	680291	LTE_CA_B1_B21_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.

No contributions

Core and Perf. part WI completed

11.8.3.9 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 4 and Band 4
[LTE_CA_B2_B2_B4_B4]

11.08.03.09	670177	LTE_CA_B2_B2_B4_B4-Core	REL-13	Dec.15	100	Nokia Networks	BS CR 36.104 R4-152732 BS CR 36.141 R4-152733 UE CR 36.101 R4-153921 UE RRM 36.133 R4-157511
11.08.03.09	670277	LTE_CA_B2_B2_B4_B4-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-153796 Release independence REL-12 CR R4-153797 Release independence REL-13 CR R4-153798

No contributions

Core and Perf. part WI completed

11.8.3.10 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 4 and Band 5
[LTE_CA_B2_B2_B4_B5]

11.08.03.10	680194	LTE_CA_B2_B2_B4_B5-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.10	680294	LTE_CA_B2_B2_B4_B5-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)

No contributions

Core and Perf. part WI completed

11.8.3.11 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 4 and Band 12
[LTE_CA_B2_B2_B4_B12]

11.08.03.11	670176	LTE_CA_B2_B2_B4_B12-Core	REL-13	Dec.15	100	Nokia Networks	BS CR 36.104 R4-152732 BS CR 36.141 R4-152733 UE CR 36.101 R4-153921 UE RRM 36.133 R4-157511
11.08.03.11	670276	LTE_CA_B2_B2_B4_B12-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-153796 Release independence REL-12 CR R4-153797 Release independence REL-13 CR R4-153798

No contributions

Core and Perf. part WI completed

11.8.3.12 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 5 and Band 12
[LTE_CA_B2_B2_B5_B12]

11.08.03.12	681100	LTE_CA_B2_B2_B5_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.12	681200	LTE_CA_B2_B2_B5_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)

No contributions

Core and Perf. part WI completed

11.8.3.13 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 5 and Band 30
[LTE_CA_B2_B2_B5_B30]

11.08.03.13	661104	LTE_CA_B2_B2_B5_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.13	661204	LTE_CA_B2_B2_B5_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

No contributions

Core and Perf. part WI completed

11.8.3.14 LTE Advanced 4-Band CA (4DL/1UL) of Band 2, Band 2, Band 12 and Band 12
[LTE_CA_B2_B2_B12_B12]

11.08.03.14	680195	LTE_CA_B2_B2_B12_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.14	680295	LTE_CA_B2_B2_B12_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)

No contributions

Core and Perf. part WI completed

11.8.3.15 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 12 and Band 30
[LTE_CA_B2_B2_B12_B30]

11.08.03.15	661103	LTE_CA_B2_B2_B12_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

11.08.03.15	661203	LTE_CA_B2_B2_B12_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

No contributions

Core and Perf. part WI completed

11.8.3.16 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 2, Band 29 and Band 30
[LTE_CA_B2_B2_B29_B30]

11.08.03.16	661105	LTE_CA_B2_B2_B29_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.16	661205	LTE_CA_B2_B2_B29_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

No contributions

Core and Perf. part WI completed

11.8.3.17 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 4 and Band 12
[LTE_CA_B2_B4_B4_B12]

11.08.03.17	670175	LTE_CA_B2_B4_B4_B12-Core	REL-13	Dec.15	100	Nokia Networks	BS CR 36.104 R4-152732 BS CR 36.141 R4-152733 UE CR 36.101 R4-153921 UE RRM 36.133 R4-157511
11.08.03.17	670275	LTE_CA_B2_B4_B4_B12-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-153796 Release independence REL-12 CR R4-153797 Release independence REL-13 CR R4-153798

No contributions

Core and Perf. part WI completed

11.8.3.18 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 5 and Band 12
[LTE_CA_B2_B4_B5_B12]

11.08.03.18	680193	LTE_CA_B2_B4_B5_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.18	680293	LTE_CA_B2_B4_B5_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)

No contributions

Core and Perf. part WI completed

11.8.3.19 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 5 and Band 29
[LTE_CA_B2_B4_B5_B29]

11.08.03.19	670180	LTE_CA_B2_B4_B5_B29-Core	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-155368, R4-155072. Way forward on measurement requirements for 3rd and 4th activated SCells agreed in R4-157511.
11.08.03.19	670280	LTE_CA_B2_B4_B5_B29-Perf	REL-13	Dec.15	100	Huawei	Agreed CRs: R4-154084, R4-154085, R4-155371, R4-155372, R4-155073

No contributions

Core and Perf. part WI completed

11.8.3.20 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 5 and Band 30
[LTE_CA_B2_B4_B5_B30]

11.08.03.20	661107	LTE_CA_B2_B4_B5_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.20	661207	LTE_CA_B2_B4_B5_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

No contributions

Core and Perf. part WI completed

11.8.3.21 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 7 and Band 12
[LTE_CA_B2_B4_B7_B12]

11.08.03.21	680185	LTE_CA_B2_B4_B7_B12-Core	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.21	680285	LTE_CA_B2_B4_B7_B12-Perf	REL-13	March 16	0	Rogers Communications	WI is not ready. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-152022 Work item exception for LTE Advanced 4 band Carrier Aggregation (4DL/1UL) of Band 2, Band 4, Band 7 and Band 12 Rogers CommunicationsWI exception request RAN4 s (4DL/1UL) Rel-13LTE_CA_B2_B4_B7_B12-Core
conclusion: approved

RP-151786 Revised WI: LTE Advanced 4 Band Carrier Aggregation (4DL/1UL) of Band 2, Band 4, Band 7 and Band 12 Rogers CommunicationsWID revised RAN4 s (4DL/1UL) Rel-13 LTE_CA_B2_B4_B7_B12
last approved WID: RP-150628; completion date postponed to March 16
conclusion: approved

11.8.3.22 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 12 and Band 30
[LTE_CA_B2_B4_B12_B30]

11.08.03.22	661106	LTE_CA_B2_B4_B12_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.
11.08.03.22	661206	LTE_CA_B2_B4_B12_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

No contributions

Core and Perf. part WI completed

11.8.3.23 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 29 and Band 30
[LTE_CA_B2_B4_B29_B30]

11.08.03.23	661108	LTE_CA_B2_B4_B29_B30-Core	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

11.08.03.23	661208	LTE_CA_B2_B4_B29_B30-Perf	REL-13	Dec.15	100	AT&T	UE CRs agreed in R4-153921, -3796...-3798. BS CRs agreed in R4-152732, -2733. RRM CRs agreed in R4-152980, -3683, -8375.

No contributions

Core and Perf. part WI completed

11.8.3.24 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 5, Band 12 and Band 12
[LTE_CA_B2_B5_B12_B12]

11.08.03.24	681101	LTE_CA_B2_B5_B12_B12-Core	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)
11.08.03.24	681201	LTE_CA_B2_B5_B12_B12-Perf	REL-13	Dec.15	100	U.S. Cellular	Agreed CRs R4-157426, -7430, -8008, -8009)

No contributions

Core and Perf. part WI completed

11.8.3.25 LTE Advanced 4 Band CA (4DL/1UL) of Band 3, Band 7, Band 7 and Band 28
[**New WI**: LTE_CA_B3_B7_B7_B28]

11.08.03.25	690185	LTE_CA_B3_B7_B7_B28-Core	REL-13	Dec.15	100	Telstra	Agreed CR:R4-157426
11.08.03.25	690285	LTE_CA_B3_B7_B7_B28-Perf	REL-13	Dec.15	100	Telstra	Agreed CRs: R4-157428, R4-157429, R4-157430

No contributions

Core and Perf. part WI completed

11.8.3.26 LTE Advanced 4 Band CA (4DL/1UL) of Band 3, Band 19, Band 42 and Band 42
[LTE_CA_B3_B19_B42_B42]

11.08.03.26	680189	LTE_CA_B3_B19_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.26	680289	LTE_CA_B3_B19_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.

No contributions

Core and Perf. part WI completed

11.8.3.27 LTE Advanced 4 Band CA (4DL/1UL) for Band 3, Band 28, Band 40 and Band 40
[**New WI**: LTE_CA_B3_B28_B40_B40]

11.08.03.27	690183	LTE_CA_B3_B28_B40_B40-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-157426 TS36.104 CR agreed in R4-158008
11.08.03.27	690283	LTE_CA_B3_B28_B40_B40-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157429, R4-157430 TS 36.141 CR agreed in R4-158009

No contributions

Core and Perf. part WI completed

11.8.3.28 LTE Advanced 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 5 and Band 30
[LTE_CA_B4_B4_B5_B30]

11.08.03.28	680196	LTE_CA_B4_B4_B5_B30-Core	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.

11.08.03.28	680296	LTE_CA_B4_B4_B5_B30-Perf	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-152122 Core part: LTE Advanced 4 Band Carrier Aggregation (4DL/1UL) of Band 4, Band 4, Band 5 and Band 30 ATT WI exception request RAN4 s (4DL/1UL) Rel-13 LTE_CA_B4_B4_B5_B30-Core
conclusion: approved

11.8.3.29 LTE Advanced 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 12 and Band 30
[LTE_CA_B4_B4_B12_B30]

11.08.03.29	680197	LTE_CA_B4_B4_B12_B30-Core	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.29	680297	LTE_CA_B4_B4_B12_B30-Perf	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-152123 Core part: LTE Advanced 4 Band Carrier Aggregation (4DL/1UL) of Band 4, Band 4, Band 12 and Band 30 ATT WI exception request RAN4 s (4DL/1UL) Rel-13 LTE_CA_B4_B4_B12_B30-Core
conclusion: approved

11.8.3.30 LTE Advanced 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 29 and Band 30
[LTE_CA_B4_B4_B29_B30]

11.08.03.30	680198	LTE_CA_B4_B4_B29_B30-Core	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.03.30	680298	LTE_CA_B4_B4_B29_B30-Perf	REL-13	March 16	50	AT&T	UE ΔTIB,c and ΔRIB,c are missing. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-152124 Core part: LTE Advanced 4 Band Carrier Aggregation (4DL/1UL) of Band 4, Band 4, Band 29 and Band 30 ATT WI exception request RAN4 s (4DL/1UL) Rel-13 LTE_CA_B4_B4_B29_B30-Core
conclusion: approved

11.8.3.31 LTE Advanced 4 Band CA (4DL/1UL) of Band 19, Band 21, Band 42 and Band 42
[LTE_CA_B19_B21_B42_B42]

11.08.03.31	680192	LTE_CA_B19_B21_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue since CR for TS36.133 (R4-158375) was agreed in RAN4#77.
11.08.03.31	680292	LTE_CA_B19_B21_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO, INC.	No open issue.

No contributions

Core and Perf. part WI completed

11.8.3.32 LTE Advanced 4 Band CA (4DL/1UL) of Band 25, Band 41, Band 41 and Band 41
[LTE_CA_B25_B41_B41_B41]

11.08.03.32	661109	LTE_CA_B25_B41_B41_B41-Core	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.101 CR agreed in R4-153921; TS 36.104 CR agreed in R4-152732; TS 36.133 CRs agreed in R4-152980, R4-153683. Way forward on measurement requirements for 3rd and 4th activated SCells agreed in R4-157511.

11.08.03.32	661209	LTE_CA_B25_B41_B41_B41-Perf	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.307 CRs agreed in R4-153796, R4-153797, R4-153798; TS 36.141 CR agreed in R4-152733.

No contributions

Core and Perf. part WI completed

11.8.3.33 LTE Advanced 4 Band CA (4DL/1UL) for Band 28, Band 40, Band 40 and Band 40

[**New WI**: LTE_CA_B28_B40_B40_B40]

11.08.03.33	690184	LTE_CA_B28_B40_B40_B40-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-157426
11.08.03.33	690284	LTE_CA_B28_B40_B40_B40-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-157429, R4-157430

No contributions

Core and Perf. part WI completed

11.8.3.34 LTE Advanced 4 Band CA (4DL/1UL) of Band 39, Band 39, Band 41 and Band 41

[**New WI**: LTE_CA_B39_B39_B41_B41]

11.08.03.34	690179	LTE_CA_B39_B39_B41_B41-Core	REL-13	Dec.15	100	CMCC	TS36.101 CR agreed in R4-157426
11.08.03.34	690279	LTE_CA_B39_B39_B41_B41-Perf	REL-13	Dec.15	100	CMCC	TS 36.307 CRs agreed in R4-157427 , R4-157428, R4-157429, R4-157430

No contributions

Core and Perf. part WI completed

11.8.3.35 LTE Advanced 4 Band CA (4DL/1UL) of Band 39, Band 41, Band 41 and Band 41

[**New WI**: LTE_CA_B39_B41_B41_B41]

11.08.03.35	690178	LTE_CA_B39_B41_B41_B41-Core	REL-13	Dec.15	100	CMCC	TS36.101 CR agreed in R4-157426
11.08.03.35	690278	LTE_CA_B39_B41_B41_B41-Perf	REL-13	Dec.15	100	CMCC	TS 36.307 CRs agreed in R4-157427 , R4-157428, R4-157429, R4-157430

No contributions

Core and Perf. part WI completed

11.8.3.36 LTE Advanced 4 Band CA (4DL/1UL) of Band 41, Band 41, Band 42 and Band 42

[LTE_CA_B41_B41_B42_B42]

11.08.03.36	680184	LTE_CA_B41_B41_B42_B42-Core	REL-13	Dec.15	100	ZTE	TS 36.101 CR agreed in157426.
11.08.03.36	680284	LTE_CA_B41_B41_B42_B42-Perf	REL-13	Dec.15	100	ZTE	TS 36.307 CRs agreed in R4-157427, R4-157428, R4-157429, R4-157430.

No contributions

Core and Perf. part WI completed

11.8.4 5 Band Carrier Aggregation (5DL/1UL)

RP-152163 5 Band Carrier Aggregation (5DL/1UL) RAN4 CR Pack Rel-13 LTE_CA_B1_B19_B21_B42_B42-Core, LTE_CA_B1_B19_B21_B42_B42-Perf, LTE_CA_B1_B3_B19_B42_B42-Core, LTE_CA_B1_B3_B19_B42_B42-Perf, LTE_CA_B1_B3_B7_B7_B28-Core, LTE_CA_B1_B3_B7_B7_B28-Perf, LTE_CA_B3_B3_B7_B7_B28-Core, LTE_CA_B3_B3_B7_B7_B28-Perf

conclusion: approved

RP-151740 Rel-13 TR 36.857-13 v1.0.0 "LTE Advanced 5 Band Carrier Aggregation (5DL/1UL)" NTT DOCOMO draft TR 36.857-13 RAN4 Rel-13 LTE_CA_B1_B3_B19_B42_B42-Core
RAN4 TR 36.857-13 is submitted for 1-step approval;
conclusion: revised in RP-152190 to align with drafting rules

RP-152190 Rel-13 TR 36.857-13 v1.0.1 "LTE Advanced 5 Band Carrier Aggregation (5DL/1UL)" NTT DOCOMO draft TR 36.857-13 RAN4 Rel-13 LTE_CA_B1_B3_B19_B42_B42-Core
revision of RP-151740; RAN4 TR 36.857-13 is submitted for 1-step approval
conclusion: TR 36.857-13 is approved as v13.0.0

11.8.4.1 LTE Advanced 5 Band CA (5DL/1UL) of Band 1, Band 3, Band 7, Band 7 and Band 28 [**New WI**: LTE_CA_B1_B3_B7_B7_B28]

11.08.04.1	690191	LTE_CA_B1_B3_B7_B7_B28-Core	REL-13	March 16	95	Telstra	All requirements ready except for the generic MSD values for Band 1 and Band 28 to be included. CA combination will be included in Big CRs in next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.04.1	690291	LTE_CA_B1_B3_B7_B7_B28-Perf	REL-13	March 16	95	Telstra	All requirements ready and approved in a TR. CA combination will be included in Big CRs in next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-151987 Exception for LTE Advanced 5 Band Carrier Aggregation (5DL/1UL) of Band 1, Band 3, Band 7, Band 7 and Band 28 Telstra Corporation Limited WI exception request RAN4 s (5DL/1UL) Rel-13 LTE_CA_B1_B3_B7_B7_B28-Core
conclusion: approved

11.8.4.2 LTE Advanced 5 Band CA (5DL/1UL) of Band 1, Band 3, Band 19, Band 42 and Band 42 [**New WI**: LTE_CA_B1_B3_B19_B42_B42]

11.08.04.2	690189	LTE_CA_B1_B3_B19_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CR for TS36.101 (R4-157346) was agreed in RAN4#77. CR for TS36.104 is not nessesary since this combination is already captured in this spec. CRs for TS36.133 (R4-158375, R4-158373) were agreed in RAN4#77.
11.08.04.2	690289	LTE_CA_B1_B3_B19_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CRs for TS36.307(R4-157348, R4-157349) were agreed in RAN4#77. CR for TS36.141 is not nessesary since this combination is already captured in this spec. CR for TS36.133 (R4-155648) was agreed in RAN4#77.

No contributions

Core and Perf. part WI completed

11.8.4.3 LTE Advanced 5 Band CA (5DL/1UL) of Band 1, Band 19, Band 21, Band 42 and Band 42 [**New WI**: LTE_CA_B1_B19_B21_B42_B42]

11.08.04.3	690190	LTE_CA_B1_B19_B21_B42_B42-Core	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CR for TS36.101 (R4-157346) was agreed in RAN4#77. CR for TS36.104 is not nessesary since this combination is already captured in this spec. CRs for TS36.133 (R4-158375, R4-158373) were agreed in RAN4#77.

11.08.04.3	690290	LTE_CA_B1_B19_B21_B42_B42-Perf	REL-13	Dec.15	100	NTT DOCOMO	No open issues. CRs for TS36.307(R4-157348, R4-157349) were agreed in RAN4#77. CR for TS36.141 is not nessesary since this combination is already captured in this spec. CR for TS36.133 (R4-155648) was agreed in RAN4#77.

No contributions

Core and Perf. part WI completed

11.8.4.4 LTE Advanced 5 Band CA (5DL/1UL) of Band 3, Band 3, Band 7, Band 7 and Band 28 [**New WI**: LTE_CA_B3_B3_B7_B7_B28]

11.08.04.4	690192	LTE_CA_B3_B3_B7_B7_B28-Core	REL-13	March 16	95	Telstra	All requirements ready and approved in a TR. CA combination will be included in Big CRs in the next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.
11.08.04.4	690292	LTE_CA_B3_B3_B7_B7_B28-Perf	REL-13	March 16	95	Telstra	All requirements ready and approved in a TR. CA combination will be included in Big CRs in next RAN4#78. Proponent should provide the exception sheet to keep the WI in Rel-13.

RP-151989 Exception for LTE Advanced 5 Band Carrier Aggregation (5DL/1UL) of Band 3, Band 3, Band 7, Band 7 and Band 28 Telstra Corporation Limited WI exception request RAN4 s (5DL/1UL) Rel-13 LTE_CA_B3_B3_B7_B7_B28-Core
conclusion: approved

11.8.5 Inter-band CA related WIs (2UL)

RP-151816 TR 36.860-13 V1.0.0 LTE Advanced Dual Uplink Inter-band Carrier Aggregation Huawei, HiSilicon draft TR 36.860-13 RAN4 Rel-13 LTE_CA_2UL_R13-A1-Core
RAN4 TR 36.860-13 is submitted for 1-step approval
conclusion: TR 36.860-13 is approved as v13.0.0

11.8.5.1 LTE Advanced dual uplink inter-band CA Class A1 in REL-13 [LTE_CA_2UL_R13-A1]

11.08.05.1	661110	LTE_CA_2UL_R13-A1-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CRs agreed in R4-155825, R4-157045.
11.08.05.1	661210	LTE_CA_2UL_R13-A1-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-156028, R4-155828, R4-157046, R4-157047.

No contributions

Core and Perf. part WI completed

11.8.5.2 LTE Advanced dual uplink inter-band CA Class A2 in REL-13 [LTE_CA_2UL_R13-A2]

11.08.05.2	661111	LTE_CA_2UL_R13-A2-Core	REL-13	Dec.15	100	Qualcomm	Core specifications for CA_1A-28A combination have already been endorsed. No further work is required in Rel-13 to complete this WI.
11.08.05.2	661211	LTE_CA_2UL_R13-A2-Perf	REL-13	Dec.15	100	Qualcomm	Release independent specifications for CA_1A-28A combination have already been endorsed. No further work is required in Rel-13 to complete this WI.

No contributions

Core and Perf. part WI completed

11.8.5.3 LTE Advanced dual uplink inter-band CA Class A3 in REL-13

[LTE_CA_2UL_R13-A3]

11.08.05.3	661112	LTE_CA_2UL_R13-A3-Core	REL-13	Dec.15	100	Ericsson	CA_18A-28A (only combination in WID after RAN#67) completed and included in agreed CR to 36.101 (R4-153755). No other band combination proposed for Rel-13. GNSS protection: LS received from RAN2 on IDC enhancements for UL CA operations introduced from Rel-11. No further action expected from RAN4 at this stage.
11.08.05.3	661212	LTE_CA_2UL_R13-A3-Perf	REL-13	Dec.15	100	Ericsson	CA_18A-28A (only combination in WID after RAN#67) completed and included in agreed CR (R4-153266). No other band combination proposed for Rel-13.

No contributions

Core and Perf. part WI completed

11.8.5.4 LTE Advanced dual uplink inter-band CA Class A4 in REL-13

[LTE_CA_2UL_R13-A4]

11.08.05.4	670182	LTE_CA_2UL_R13-A4-Core	REL-13	Dec.15	100	Nokia Networks	UE CR 36.101 R4-155825
11.08.05.4	670282	LTE_CA_2UL_R13-A4-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence R4-155828, R4-155829 and R4-156028

No contributions

Core and Perf. part WI completed

11.8.5.5 LTE Advanced dual uplink inter-band CA FDD-TDD

[LTE_CA_2UL_FDD_TDD]

11.08.05.5	670181	LTE_CA_2UL_FDD_TDD-Core	REL-13	Dec.15	100	KDDI	NONE (CRs were already approved in RAN#69 and no new combination had been introduced between RAN#69 and RAN#70 and WI can be closed.)
11.08.05.5	670281	LTE_CA_2UL_FDD_TDD-Perf	REL-13	Dec.15	100	KDDI	NONE (CRs were already approved in RAN#69 and no new combination had been introduced between RAN#69 and RAN#70 and WI can be closed.)

No contributions

Core and Perf. part WI completed

11.8.6 WIs related to pairing of 3DL and 2UL inter-band CA

RP-151930 TR 36.879-13 v1.0.0 on LTE Advanced 3DL/2UL inter-band Carrier Aggregation LG Electronics
draft TR 36.879-13 RAN4 Rel-13 LTE_CA_3DL_2UL-Core
RAN4 TR 36.879-13 submitted for 1-step approval
conclusion: TR 36.879-13 is approved as v13.0.0.

11.8.6.1 LTE Advanced 3DL/2UL inter-band CA [LTE_CA_3DL_2UL]

11.08.06.1	670183	LTE_CA_3DL_2UL-Core	REL-13	Dec.15	100	Nokia Networks	UE CR 36.101 R4-158263
11.08.06.1	670283	LTE_CA_3DL_2UL-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence R4-157405 and R4-157406

RP-151919 Revised WI: LTE Advanced 3DL/2UL inter-band Carrier Aggregation Nokia Networks, LG Electronics WID revised RAN4 s (3DL/2UL) Rel-13 LTE_CA_3DL_2UL
last approved WD: RP-151230; information about agreed CR added
conclusion: revised in RP-152239

RP-152239 Revised WI: LTE Advanced 3DL/2UL inter-band Carrier Aggregation Nokia Networks, LG Electronics WID revised RAN4 s (3DL/2UL) Rel-13 LTE_CA_3DL_2UL
conclusion: approved

RP-152164 LTE Advanced 3DL/2UL inter-band Carrier Aggregation RAN4 CR Pack Rel-13 LTE_CA_3DL_2UL-Core, LTE_CA_3DL_2UL-Perf
conclusion: approved

Core and Perf. part WI completed

11.8.6.2 LTE Advanced 3DL/2UL mixed intra- and inter-band CA

[LTE_CA_3DL_2UL_inter_intra]

11.08.06.2	681102	LTE_CA_3DL_2UL_inter_intra-Core	REL-13	Dec.15	100	Nokia Networks	TP to 3DL/2UL TR 36.879-13 agreed in R4-156524 TP to 3DL/2UL TR 36.879-13 agreed in R4-156525 BS CR 36.101 R4-157873
11.08.06.2	681202	LTE_CA_3DL_2UL_inter_intra-Perf	REL-13	Dec.15	100	Nokia Networks	Release independence REL-11 CR R4-157837 Release independence REL-12 CR R4-157868 Release independence REL-13 CR R4-157871

RP-151935 Revised WI: LTE Advanced 3DL/2UL mixed intra- and inter-band Carrier Aggregation Nokia Networks, LG Electronics WID revised RAN4 s (3DL/2UL) Rel-13 LTE_CA_3DL_2UL_inter_intra
last approved WID: RP-151576; information about agreed CR added
conclusion: approved

RP-152165 LTE Advanced 3DL/2UL mixed intra- and inter-band Carrier Aggregation RAN4 CR Pack Rel-13 LTE_CA_3DL_2UL_inter_intra-Core, LTE_CA_3DL_2UL_inter_intra-Perf
conclusion: approved

Core and Perf. part WI completed

11.8.7 WIs related to pairing of 3DL and 3UL inter-band CA

RP-152166 WIs related to pairing of 3DL and 3UL inter-band CA RAN4 CR Pack Rel-13 LTE_CA_3DL3UL_B39_B41_B41-Perf; LTE_CA_3DL3UL_B39_B39_B41-Perf
conclusion: approved

11.8.7.1 LTE Advanced 3 Band CA (3DL/3UL) of Band 39, Band 39 and Band 41

[LTE_CA_3DL3UL_B39_B39_B41]

11.08.07.1	690194	LTE_CA_3DL3UL_B39_B39_B41-Core	REL-13	Dec.15	100	CATT	Agreed CR： R4-158317, R4-158374
11.08.07.1	690294	LTE_CA_3DL3UL_B39_B39_B41-Perf	REL-13	Dec.15	100	CATT	Agreed CR： R4-157235, R4-157236

RP-151850 Revised WID: LTE Advanced 3 Band Carrier Aggregation (3DL/3UL) of Band 39, Band 39 and Band 41 CATT WID revised RAN4 s (3DL/3UL) Rel-13 LTE_CA_3DL3UL_B39_B39_B41
last approved WID: RP-151403; to revise TR information
conclusion: approved

RP-151853 TR 36.899-13 V1.0.0 on LTE Advanced inter-band Carrier Aggregation (3DL/3UL) CATT draft TR 36.899-13 RAN4 Rel-13 LTE_CA_3DL3UL_B39_B39_B41-Core
RAN4 TR 36.899-13 is submitted for 1-step approval;
conclusion: revised in RP-152191 to align with drafting rules

RP-152191 TR 36.899-13 V1.0.1 on LTE Advanced inter-band Carrier Aggregation (3DL/3UL) CATT draft TR 36.899-13 RAN4 Rel-13 LTE_CA_3DL3UL_B39_B39_B41-Core

revision of RP-151853; RAN4 TR 36.899-13 is submitted for 1-step approval
conclusion: TR 36.899-13 is approved as v13.0.0.

Core and Perf. part WI completed

11.8.7.2 LTE Advanced 3 Band CA (3DL/3UL) of Band 39, Band 41 and Band 41 [LTE_CA_3DL3UL_B39_B41_B41]

11.08.07.2	690193	LTE_CA_3DL3UL_B39_B41_B41-Core	REL-13	Dec.15	100	CATT	CRs agreed: R4-158317
11.08.07.2	690293	LTE_CA_3DL3UL_B39_B41_B41-Perf	REL-13	Dec.15	100	CATT	CRs agreed: R4-147235, R4-157236

RP-151846 Revised WID: LTE Advanced 3 Band Carrier Aggregation (3DL/3UL) of Band 39, Band 41 and Band 41 CATT WID revised RAN4 s (3DL/3UL) Rel-13 LTE_CA_3DL3UL_B39_B41_B41
last approved WID: RP-151402; to revise TR information
conclusion: approved

Core and Perf. part WI completed

11.8.8 Intra-band CA related WIs (contiguous 2DL)

11.8.8.1 LTE Advanced intra-band contiguous CA in Band 5 [LTE_CA_C_B5]

11.08.08.1	681103	LTE_CA_C_B5-Core	REL-13	Dec.15	100	Intel	CR TS 36.101 agreed in R4-158254; CR TS 36.104 agreed in R4-156968
11.08.08.1	681203	LTE_CA_C_B5-Perf	REL-13	Dec.15	100	Intel	CR TS 36.141 agreed in R4-156969; CR TS 36.307 agreed in R4-156970, R4-158255, R4-158256 and R4-158257

RP-151871 Revised WID: LTE Advanced Carrier Aggregation of Intra-band Contiguous of Band 5 Intel WID revised RAN4 s (C) Rel-13 LTE_CA_C_B5
last approved WID: RP-151035; to add TR information
conclusion: approved

RP-152167 LTE Advanced intra-band contiguous Carrier Aggregation in Band 5 RAN4 CR Pack Rel-13 LTE_CA_C_B5-Core, LTE_CA_C_B5-Perf
conclusion: approved

Core and Perf. part WI completed

11.8.8.2 LTE Advanced intra-band contiguous CA in Band 8 [LTE_CA_C_B8]

11.08.08.2	670185	LTE_CA_C_B8-Core	REL-13	Dec.15	100	CMCC	TS 36.101 CR agreed in R4-156784 TS 36.104 CR agreed in R4-155981
11.08.08.2	670285	LTE_CA_C_B8-Perf	REL-13	Dec.15	100	CMCC	TS 36.307 CRs agreed in R4-155983 , R4-155984, R4-155985,R4-155986 TS 36.141 CR agreed in R4-155982.

RP-152168 LTE Advanced intra-band contiguous Carrier Aggregation in Band 8 RAN4 CR Pack Rel-13 LTE_CA_C_B8-Core, LTE_CA_C_B8-Perf
conclusion: approv ed

Core and Perf. part WI completed

11.8.9 Intra-band CA related WIs (non-contiguous 2DL)

11.8.9.1 LTE Advanced intra-band non-contiguous CA in Band 5 [LTE_CA_NC_B5]

11.08.09.1	681105	LTE_CA_NC_B5-Core	REL-13	Dec.15	100	Intel	CR TS 36.101 agreed in R4-156971; CR TS 36.104 agreed in R4-156972

11.08.09.1	681205	LTE_CA_NC_B5-Perf	REL-13	Dec.15	100	Intel	CR TS 36.141 agreed in R4-156973; CR TS 36.307 agreed in R4-156974, R4-158259 and R4-158260

RP-151872 LTE Advanced Carrier Aggregation of Intra-band non-contiguous of Band 5 Intel WID revised RAN4 s (NC) Rel-13 LTE_CA_NC_B5
last approved WID: RP-151036; to add TR information; moved from AI 11.8.8.1 to AI 11.8.9.1
conclusion: approved

RP-152169 LTE Advanced intra-band non-contiguous Carrier Aggregation in Band 5 RAN4 CR Pack Rel-13 LTE_CA_NC_B5-Core, LTE_CA_NC_B5-Perf
conclusion: approved

Core and Perf. part WI completed

11.8.9.2 Additional bandwidth combination set for LTE Advanced intra-band non-contiguous CA in Band 7 [**New WI**: LTE_CA_NC_B7_BWset]

11.08.09.2	690195	LTE_CA_NC_B7_BWset-Core	REL-13	Dec.15	100	Huawei	TS 36.101 CR R4-157432 was agreed
11.08.09.2	690295	LTE_CA_NC_B7_BWset-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs TS R4-157433 and R4-157434 were agreed

RP-151815 Revision of WI: Additional bandwidth combination set for LTE Advanced intra-band non-contiguous Carrier Aggregation in Band 7 Huawei, Bell Mobility, TELUS WID revised RAN4 s (NC) Rel-13 LTE_CA_NC_B7_BWset
last approved WID: RP-151462; Core and Perf. part box ticked, UID added
conclusion: approved

RP-152170 Additional bandwidth combination set for LTE Advanced intra-band non-contiguous Carrier Aggregation in Band 7 RAN4 CR Pack Rel-13 LTE_CA_NC_B7_BWset-Core, LTE_CA_NC_B7_BWset-Perf
conclusion: approved

Core and Perf. part WI completed

11.8.10 Intra-band CA related WIs (contiguous 4DL)

11.8.10.1 LTE Advanced intra-band contiguous CA in Band 42 for 4DL [LTE_CA_C_B42_4DL]

11.08.10.1	670186	LTE_CA_C_B42_4DL-Core	REL-13	Dec.15	100	CATT	CRs agreed: R4-156793, R4-157450
11.08.10.1	670286	LTE_CA_C_B42_4DL-Perf	REL-13	Dec.15	100	CATT	CRs agreed: R4-155480, R4-157218, R4-156844

RP-151843 TR 36.833-7-42 v1.0.0 on LTE advanced intra-band contiguous CA in Band 42 for 4DL CATT draft TR 36.833-7-42 RAN4 Rel-13 LTE_CA_C_B42_4DL-Core
RAN4 TR 36.833-7-42 submitted for 1-step approval
conclusion: TR 36.833-7-42 is approved as v13.0.0.

RP-152158 LTE Advanced intra-band contiguous Carrier Aggregation in Band 42 for 4DL RAN4 CR Pack Rel-13 LTE_CA_C_B42_4DL-Core, LTE_CA_C_B42_4DL-Perf
conclusion: approved

Core and Perf. part WI completed

11.8.11 Intra-band CA related WIs (non-contiguous 4DL)

11.8.11.1 LTE Advanced intra-band non-contiguous CA in Band 41 for 4DL [LTE_CA_NC_B41_4DL]

11.08.11.1	661113	LTE_CA_NC_B41_4DL-Core	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.101 CR agreed in R4-158261. Way forward on measurement requirements for 3rd and 4th activated SCells agreed in R4-157511.
11.08.11.1	661213	LTE_CA_NC_B41_4DL-Perf	REL-13	Dec.15	100	Alcatel-Lucent	TS 36.307 CRs agreed in R4-157860, R4-157861 and R4-157862.

RP-151678 TR 36.833-8-41 v2.0.0 on LTE-Advanced intra-band non-contiguous Carrier Aggregation (CA) in Band 41 for 4 downlinks (4DL), presented for approval Alcatel-Lucent, Sprint draft TR 36.833-8-41 RAN4 Rel-13 LTE_CA_NC_B41_4DL-Core
RAN4 TR 36.833-8-41 v2.0.0 is submitted for approval
conclusion: TR 36.833-8-41 is approved as v13.0.0.

RP-152159 LTE Advanced intra-band non-contiguous Carrier Aggregation in Band 41 for 4DL RAN4 CR Pack Rel-13 LTE_CA_NC_B41_4DL-Core, LTE_CA_NC_B41_4DL-Perf
conclusion: approved

Core and Perf. part WI completed

11.8.11.2 LTE Advanced intra-band non-contiguous CA in Band 42 for 4DL
[LTE_CA_NC_B42_4DL]

11.08.11.2	681106	LTE_CA_NC_B42_4DL-Core	REL-13	Dec.15	100	Huawei	TS36.101 CR agreed in R4-157589
11.08.11.2	681206	LTE_CA_NC_B42_4DL-Perf	REL-13	Dec.15	100	Huawei	TS 36.307 CRs agreed in R4-155510, R4-155511, R4-155512,

RP-152160 LTE Advanced intra-band non-contiguous Carrier Aggregation in Band 42 for 4DL RAN4 CR Pack Rel-13 LTE_CA_NC_B42_4DL-Core, LTE_CA_NC_B42_4DL-Perf
conclusion: approved

Core and Perf. part WI completed

11.9 Open LTE only related WIs (spectrum and not CA related)

11.9.1 2GHz FDD LTE Band for Region 1 (1980-2010MHz and 2170-2200MHz Bands)
[LTE_1980_2170_REG1]

RP-151723 Status Report of WI 2GHz FDD LTE Band for Region 1 (1980-2010MHz and 2170-2200MHz Bands); rapporteur: Dish Network RAN4 WI status report Rel-13 LTE_1980_2170_REG1
conclusion: noted, approved: Core: 100%, Dec.15; Perf.:100%, Dec.15; Core and Perf. part WI completed

RP-151732 Work Item Proposal: 2 GHz LTE Band for Region 1 Dish Network WID revised RAN4 s Rel-13 LTE_1980_2170_REG1
last approved WID: RP-150424; revised to amend the list of affected specifications
conclusion: approved

RP-152105 RAN3 CRs for 2GHz FDD LTE Band for Region 1 RAN3 CR Pack Rel-13 LTE_1980_2170_REG1-Core
conclusion: approved

RP-152171 2GHz FDD LTE Band for Region 1 (1980-2010MHz and 2170-2200MHz Bands) RAN4 CR Pack Rel-13 LTE_1980_2170_REG1-Core, LTE_1980_2170_REG1-Perf
conclusion: approved

RP-151726 TR 36.862 v1.0.0 on 2 GHz LTE Band in Region 1 Dish Network draft TR 36.862 RAN4 Rel-13 LTE_1980_2170_REG1-Core
RAN4 TR 36.862 is submitted for 1-step approval;
conclusion: revised in RP-152187 to align with drafting rules

RP-152187 TR36.862 v1.0.1 on 2 GHz LTE Band in Region 1 Dish Network draft TR 36.862 RAN4 Rel-13 LTE_1980_2170_REG1-Core
revision of RP-151726; RAN4 TR 36.862 is submitted for 1-step approval

conclusion: TR 36.862 is approved as v13.0.0

11.9.2 AWS-Extension Band for LTE [LTE_AWS_EXT]

RP-151733 Status report of WI AWS-Extension Band for LTE; rapporteur: Ericsson RAN4 WI status report Rel-13 LTE_AWS_EXT
conclusion: noted, approved: Core: 100%, Dec.15; Perf.:100%, Dec.15; Core and Perf. part WI completed

RP-152106 RAN3 CRs for AWS-Extension Band for LTE RAN3 CR Pack Rel-13 LTE_AWS_EXT-Core
conclusion: approved

RP-152172 AWS-Extension Band for LTE RAN4 CR Pack Rel-13 LTE_AWS_EXT-Core, LTE_AWS_EXT-Perf
conclusion: approved

RP-151734 TR 36.869 v1.0.0 for approval: Advanced Wireless Services (AWS) extension band for LTE Ericsson draft TR 36.869 RAN4 Rel-13 LTE_AWS_EXT-Core
RAN4 TR 36.869 is submitted for 1-step approval;
conclusion: revised in RP-152189 to align with drafting rules

RP-152189 TR 36.869 v1.1.0 for approval: Advanced Wireless Services (AWS) extension band for LTE Ericsson draft TR 36.869 RAN4 Rel-13 LTE_AWS_EXT-Core
revision of RP-151734; RAN4 TR 36.869 is submitted for 1-step approval;
conclusion: TR 36.869 is approved as v13.0.0

11.9.3 Introduction of 1447-1467MHz Band for TD-LTE in China [LTE_TDD_1447MHz_China]

RP-151812 Status report for WI: Introduction of 1447-1467MHz Band for TD-LTE in China, rapporteur: Huawei RAN4 WI status report Rel-13 LTE_TDD_1447MHz_China
conclusion: noted, approved: Core: 100%, Dec.15; Perf.:100%, Dec.15; Core and Perf. part WI completed

RP-152107 RAN3 CRs for Introduction of 1447-1467MHz Band for TD-LTE in China RAN3 CR Pack Rel-13 LTE_TDD_1447MHz_China-Core
conclusion: approved

RP-152173 Introduction of 1447-1467MHz Band for TD-LTE in China RAN4 CR Pack Rel-13 "LTE_TDD_1447MHz_China-Core
conclusion: approved

RP-151813 TR 36.892 v1.0.0: Introduction of 1447-1467MHz Band for TD-LTE in China Huawei draft TR 36.892 RAN4 Rel-13 LTE_TDD_1447MHz_China-Core
RAN4 TR 36.892 submitted for 1-step approval
conclusion: TR 36.892 is approved as v13.0.0

11.9.4 700MHz E-UTRA FDD Band for Arab Region [LTE_FDD_700_ARAB]

RP-151715 Status report of WI 700MHz E-UTRA FDD Band for Arab Region; rapporteur: Etisalat RAN4 WI status report Rel-13 LTE_FDD_700_ARAB
conclusion: noted, approved: Core: 80%, March 16; Perf.: 0%, March 16

RP-151716 Work item except for WI 700MHz E-UTRA FDD Band for Arab Region Motorola Solutions UK Ltd. WI exception request RAN4 s Rel-13 LTE_FDD_700_ARAB-Core
conclusion: approved

11.10 Small Technical Enhancements and Improvements for Rel-13 [TEI13]

RAN2:

RP-152084 RAN2 agreed CRs on Small Technical Enhancements and Improvements for Rel-13 RAN2 CR Pack Rel-13 TEI13
conclusion: approved

RAN3:
RP-152108 RAN3 CRs for TEI13 RAN3 CR Pack Rel-13 TEI13
conclusion: approved

RAN4:
RP-152134 RAN4 CRs on Small Technical Enhancements and Improvements for Rel-13 RAN4 CR Pack Rel-13 TEI13
conclusion: approved

12 Work items with target Rel-14 (not related to conformance testing)

12.1 Open LTE only related WIs

NOTE: For the status report see AI 11.8.

12.1.1 LTE Advanced 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 5 and Band 12

[**New WI**: LTE_CA_B4_B4_B5_B12]

12.1.1	690180	LTE_CA_B4_B4_B5_B12-Core	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.
12.1.1	690280	LTE_CA_B4_B4_B5_B12-Perf	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.

No contributions

As LTE_CA_B4_B4_B5_B12-Core and LTE_CA_B4_B4_B5_B12-Perf are completed in Dec.15, the WIs are kept as REL-13 WIs and corresponding CRs are introduced in REL-13.

Core and Perf. part WI completed

12.1.2 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 4 and Band 5

[**New WI**: LTE_CA_B2_B4_B4_B5]

12.1.2	690181	LTE_CA_B2_B4_B4_B5-Core	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.
12.1.2	690281	LTE_CA_B2_B4_B4_B5-Perf	REL-14 => REL-13	Dec.15	100	US Cellular	Agreed CRs R4-157426, -7430, -8008, -8009). WI was Rel-14 but moved back to Rel-13 and included in big CRs.

No contributions

As LTE_CA_B2_B4_B4_B5-Core and LTE_CA_B2_B4_B4_B5-Perf are completed in Dec.15, the WIs are kept as REL-13 WIs and corresponding CRs are introduced in REL-13.

Core and Perf. part WI completed

12.1.3 LTE Advanced 4 Band CA (4DL/1UL) of Band 4, Band 5, Band 12 and Band 12

[**New WI**: LTE_CA_B4_B5_B12_B12]

12.1.3	690186	LTE_CA_B4_B5_B12_B12-Core	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis.

							=> WI stopped
12.1.3	690286	LTE_CA_B4_B5_B12_B12-Perf	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped

No contributions

LTE_CA_B4_B5_B12_B12-Core and LTE_CA_B4_B5_B12_B12-Perf are stopped because these CA combinations are now integrated into the new REL-14 CA basket WIs that are introduced at RAN #70 (see 4DL/1UL in RP-152249, 3DL/1UL in RP-152278 and 2DL/1UL in RP-152196).

Core part and Perf. part WI is stopped

12.1.4 LTE Advanced 4 Band CA (4DL/1UL) of Band 4, Band 4, Band 12 and Band 12

[**New WI**: LTE_CA_B4_B4_B12_B12]

12.1.4	690187	LTE_CA_B4_B4_B12_B12-Core	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped
12.1.4	690287	LTE_CA_B4_B4_B12_B12-Perf	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped

No contributions

LTE_CA_B4_B4_B12_B12-Core and LTE_CA_B4_B4_B12_B12-Perf are stopped because these CA combinations are now integrated into the new REL-14 CA basket WIs that are introduced at RAN #70 (see 4DL/1UL in RP-152249, 3DL/1UL in RP-152278 and 2DL/1UL in RP-152196).

Core part and Perf. part WI is stopped

12.1.5 LTE Advanced 4 Band CA (4DL/1UL) of Band 2, Band 4, Band 12 and Band 12

[**New WI**: LTE_CA_B2_B4_B12_B12]

12.1.5	690188	LTE_CA_B2_B4_B12_B12-Core	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped
12.1.5	690288	LTE_CA_B2_B4_B12_B12-Perf	REL-14	March 16	90	US Cellular	Rel-14 WI is not ready. Combination will be stopped and moved to Rel-14 basket Wis. => WI stopped

No contributions

LTE_CA_B2_B4_B12_B12-Core and LTE_CA_B2_B4_B12_B12-Perf are stopped because these CA combinations are now integrated into the new REL-14 CA basket WIs that are introduced at RAN #70 (see 4DL/1UL in RP-152249, 3DL/1UL in RP-152278 and 2DL/1UL in RP-152196).

Core part and Perf. part WI is stopped

13 Study Items

13.1 Closed study items

RAN1:

RP-152028 CR to clarify baseline performance of existing positioning techniques RAN1 CR Pack 37.857 0001 1 F Rel-13 FS_UTRA_LTE_iPos_enh
conclusion: approved

13.2 Open UTRA related SIs

No contributions

13.3 Open UTRA & LTE related SIs

No contributions

13.4 Open LTE only related SIs

13.4.1 REL-13 Study on LTE FDD in the bands 1980-2010 MHz and 2170-2200 MHz
[FS_LTE_1980_2170_Korea]

RP-151851 Status Report for SI Study on LTE FDD in the bands 1980-2010 MHz and 2170-2200 MHz; rapporteur: KT Corp. RAN4 WI status report Rel-13 FS_LTE_1980_2170_Korea
conclusion: noted, approved: 100%, Dec.15; SI is completed

RP-151855 Revised SID: Study on LTE FDD in the bands 1980-2010 MHz and 2170-2200 MHz KT Corp. SID revised RAN4 s Rel-13 FS_LTE_1980_2170_Korea
last approved SID: RP-150119
conclusion: approved

RP-151858 TR 36.861 v2.0.0 Study on LTE FDD in the bands 1980-2010MHz and 2170-2200MHz, for 1-step approval KT Corp. draft TR 36.861 RAN4 Rel-13 FS_LTE_1980_2170_Korea
RAN4 TR 36.861 submitted for 1-step approval
conclusion: TR 36.861 is approved as v13.0.0

13.4.2 REL-13 Study on LTE Advanced inter-band Carrier Aggregation of Band 20 and Band 28
[FS_LTE_CA_B20_B28]

RP-152041 Status report for SI Study on LTE Advanced inter-band Carrier Aggregation of Band 20 and Band 28; rapporteur: TeliaSonera RAN4 WI status report Rel-13 FS_LTE_CA_B20_B28
discussion: MCC: late submission
conclusion: noted, approved:100%, Dec.15; SI is completed
Note: SI contents is captured in existing TR 36.852-13.

13.4.3 REL-13 Study on new AWS-3/4 Band for LTE
[**New SI**: FS_LTE_AWS_3_4]

RP-151729 Status report of SI FS_LTE_AWS_3_4; rapporteur: DISH Network; source: RAN4; rapporteur: Dish Network RAN4 WI status report Rel-13 FS_LTE_AWS_3_4
conclusion: noted, approved: 100%, Dec.15; SI is completed

RP-151730 Revision of SI FS_LTE_AWS_3_4 Dish Network SID revised RAN4 s Rel-13 FS_LTE_AWS_3_4
last approved SID: RP-151626; updated with SI acronym and unique identifier
conclusion: approved

RP-151728 TR 36.870 v1.0.0 on Study on New AWS-3/4 Band for LTE Dish Network draft TR 36.870 RAN4 Rel-13 FS_LTE_AWS_3_4
RAN4 TR 36.870 is submitted for 1-step approval;
conclusion: revised in RP-152188 to align with drafting rules

RP-152188 TR 36.870 v1.0.1 on Study on New AWS-3/4 Band for LTE Dish Network draft TR 36.870 RAN4 Rel-13 FS_LTE_AWS_3_4
revision of RP-151728; RAN4 TR 36.870 is submitted for 1-step approval
conclusion: TR 36.870 is approved as v13.0.0

13.4.4 REL-13 Study on performance enhancements for high speed scenario in LTE [FS_LTE_high_speed]

RP-151793 Status report of SI Study on performance enhancements for high speed scenario in LTE; rapporteur: NTT DOCOMOC, INC. RAN4 WI status report Rel-13 FS_LTE_high_speed
conclusion: noted, approved: 100%, Dec.15; SI is completed

RP-151814 TR 36.878 v2.0.0 on Performance enhancements for high speed scenario, for approval Huawei draft TR 36.878 RAN4 Rel-13 FS_LTE_high_speed
RAN4 TR 36.878 is submitted for approval
conclusion: TR 36.878 is approved as v13.0.0

13.4.5 REL-13 Study on Downlink Multiuser Superposition Transmission for LTE [FS_LTE_MUST]

RP-151921 Status Report for SI: Study on Downlink Multiuser Superposition Transmission; rapporteur: MediaTek RAN2 WI status report Rel-13 FS_LTE_MUST
conclusion: revised in RP-152177
RP-152177 Status Report for SI: Study on Downlink Multiuser Superposition Transmission; rapporteur: MediaTek RAN2 WI status report Rel-13 FS_LTE_MUST
discussion: MCC: late submission
conclusion: noted, approved: 100%, Dec.15; SI is completed

RP-151924 TR 36.859 v1.0.1 on Study on Downlink Multiuser Superposition Transmission for LTE MediaTek Inc. draft TR 36.859 RAN1 Rel-13 FS_LTE_MUST
RAN1 TR 36.859 submitted for 1-step approval
conclusion: TR 36.859 is approved as v13.0.0

13.4.6 REL-13 Study on Measurement gap enhancement for LTE [FS_LTE_meas_gap]

RP-151873 Status report of SI Study on Measurement gap enhancement; rapporteur: Intel Corporation RAN4 WI status report Rel-13 FS_LTE_meas_gap
conclusion: noted, approved: 100%, Dec.15; SI is completed

RP-151875 TR 36.894 v1.0.0 on Measurement gap enhancement for EUTRA Intel Corporation draft TR 36.894 RAN4 Rel-13 FS_LTE_meas_gap
RAN4 TR 36.894 submitted for 1-step approval;
conclusion: revised in RP-152192 to align with drafting rules
RP-152192 TR 36.894 v1.0.1 on Measurement gap enhancement for EUTRA Intel Corporation draft TR 36.894 RAN4 Rel-13 FS_LTE_meas_gap
RAN4 TR 36.894 submitted for 1-step approval
conclusion: TR 36.894 is approved as v13.0.0

13.4.7 REL-13 Study on Network Assistance for Network Synchronization in LTE [FS_LTE_NW_SYNC]

RP-151807 Status report for SI: Network Assistance for Network Synchronization in LTE, rapporteur: Huawei RAN3 WI status report Rel-13 FS_LTE_NW_SYNC
discussion: Ericsson: The status report shifts the target date one quarter and add 1 TU for RAN3, but the update to the TU does not show any change bars. The RAN# for the new target date is also wrong, should be RAN#71 (and not RAN#70);
MCC: with shifting the target date by 3 months the SI is shifted to REL-14
conclusion: revised in RP-152204
RP-152204 Status report for SI: Network Assistance for Network Synchronization in LTE, rapporteur: Huawei RAN3 WI status report Rel-13 FS_LTE_NW_SYNC
revision of RP-151807 which was flagged by Ericsson and MCC; MCC: late submission
discussion: RAN3 chair: date was fixed
conclusion: noted, approved: 60%, March 16; SI is shifted to REL-14

RP-151808 TR 36.898 v1.0.0 on Network Assistance for Network Synchronization in LTE, for information RAN3 draft TR 36.898 RAN3 Rel-13 FS_LTE_NW_SYNC
RAN3 TR36.898 is submitted for information
conclusion: noted

13.4.8 REL-14 Study on Latency reduction techniques for LTE [FS_LTE_LATRED]

RP-151909 Status report for SI Study on Latency reduction techniques for LTE; rapporteur: Ericsson RAN2 WI status report Rel-14 FS_LTE_LATRED
conclusion: noted, approved: 50%, June 16

13.4.9 REL-14 Feasibility Study on LTE-based V2X Services [FS_LTE_V2X]

RP-151661 LS on study on PC5 transport for V2V services (R1-157903; to: RAN; cc: -; contact: LG) RAN1 LS in Rel-14 FS_LTE_V2X
no explicit RAN action requested
conclusion: noted, no LS answer

RP-151941 Status report of SI: Feasibility Study on LTE-based V2X Services; rapporteur: LG Electronics RAN1 WI status report Rel-14 FS_LTE_V2X
conclusion: noted, approved: 35%, June 16

13.4.10 REL-14 Study on High Power LTE UE for Band 41 [FS_LTE_B41_HPUE]

RP-152111 Status report of SI Study on High Power LTE UE for Band 41; rapporteur: Sprint RAN4 WI status report Rel-14 FS_LTE_B41_HPUE
discussion: MCC: late submission; SI is shifted by 1 year?, outside of REL-14; no % complete provided; revision necessary
discussion: NEC: Dec.16 is the target?
Sprint: Dec.16
conclusion: revised in RP-152248
RP-152248 Status report of SI Study on High Power LTE UE for Band 41; rapporteur: Sprint RAN4 WI status report Rel-14 FS_LTE_B41_HPUE
conclusion: noted, approved: 10%, Dec.16

14 New Work Items/Study Items

14.1 New core functions

RAN chairman: As announced at RAN#70 we won't approve new R2/3/4 (non-spectrum) proposals as these groups will be focusing on R13 completion. If RAN1 has some availability, we would could start new work in RAN1.

Time budgets:

RP-152202 Status of time budgets for RAN1/2/3/4 REL-13 & beyond WIs/SIs after RAN #69
RAN1/RAN2/RAN3/RAN4 chairmen discussion Rel-13 -
note: The status after RAN #69 was endorsed in RP-151600.
conclusion: revised in RP-152298

RP-152298 Status of time budgets for RAN1/2/3/4 REL-13 & beyond WIs/SIs after RAN #69
RAN1/RAN2/RAN3/RAN4 chairmen discussion Rel-13 -
conclusion: RP-152298 was endorsed during RAN #70 but afterwards some corrections were needed; revised in RP-152300 (during email discussion)

RP-152300 Status of time budgets for RAN1/2/3/4 REL-13 & beyond WIs/SIs after RAN #70
RAN1/RAN2/RAN3/RAN4 chairmen discussion Rel-13 -
conclusion: endorsed (via email discussion)

14.1.1 WIs/SIs led by RAN1

SDL TDD:

RP-151908 Way forward on possible new configuration for TD-LTE NTT DOCOMO discussion
Rel-13 - Way forward on new possible configuration for TD-LTE is provided based on the discussion in PCG#35.
proposal: New possible configurations for TD-LTE shall be introduced into REL-13
conclusion: noted

RP-152186 PCG#35_26: Way forward on handling the all DL configuration for LTE TDD CCSA discussion
This is PCG Tdoc PCG#35_26 which is provided to RAN on request of the RAN chairman
Proposed way forward: TDD SDL configuration is standardized only in the 5G new radio/phase 1
discussion: RAN chair: applicable to all or just for new bands? seems for all new bands
ZTE: we can go for the comprise to consider all bands if it is for 5G new radio but this was not our original proposal
conclusion: noted

discussion about RP-151908 & RP-152186:
Vodafone: agrees with this paper
Deutsche Telekom: supports the NTT DOCOMO and would like to have something before 5G
TeliaSonera: SI showed that it is feasible and supports NTT DOCOMO
KT: supports this for REL-13
CATT: SI revealed significant coexistence issues
Telefonica: coexistence issues depend on where you are in the world so we support NTT DOCOMO's proposal
Sprint: not yet convinced that it is technically feasible in all cases
Huawei: does not agree that it is feasible
RAN chair: would a SI help to solve the open issues?
Nokia Networks: technically there is no open issue anymore by measurement we could identify whether there is a problem
RAN chair: could we agree the CCSA proposal as a baseline and then discuss
NTT DOCOMO: why should we go for this?
RAN chair: it means in worst case you will have it in REL-15 and we can then still see how to address short term needs (e.g. Orange has a proposal) so is rather a fallback than a baseline
Deutsche Telekom: European regulators make steps already in the direction of FDD SDL and we want to have it for TDD so there are already urgent needs

KT: we have an FDD - TDD configuration already in REL-12 so this needs to be approved from REL-13
CATT: wants to consider it only for 5G and not for LTE
Nokia Networks: if we go FDD SDL, then this would be worse for TDD as with TDD SDL UEs will support other TDD modes as well
RAN chair: suggests offline discussion of the proponents
LG: we have not yet discussed the duplex scheme for the new RAT so how can we say that TDD SDL would work there
RAN chair: in some countries the regulation talks about TDD
Vodafone: what is different in coexistence when considering a 5G radio compared to LTE
CATT: standalone and non-stand-alone could be considered in 5G
offline discussion (rapporteur: Balazs Bertanyi (Nokia Networks)

RP-152261 Summary on new TDD configuration discussions Nokia Networks report Rel-13 -
report of offline discussion
proposal:
- *Downlink-only TDD configuration can be introduced to the new 5G RAT in phase-1 (Rel-15) in a band agnostic manner*
  - *The principles described in the conclusion of TR36.825 still apply when introducing DL-only TDD configuration*
- *No consensus to introduce new TDD configurations to LTE*

conclusion: noted, proposal is endorsed

LTE enhancements:

bandwidth flexibility for LTE

RP-151890 Motivation for new work item on bandwidth flexibility for LTE Huawei, HiSilicon discussion motiv Rel-14 -
Motivation for RP-151889
discussion: Nokia Networks: biggest impact is on RAN4 side, should be rather a RAN4 led WI
Huawei: we do not need to define a new bandwidth and RAN4 part is covered
Huawei: impact on standard in RAN1
Nokia Networks: impact on RF requirements if you modify the bandwidth
Qualcomm:2 issues mentioned in the past: impact on cell search, how does UE find this bandwidth
RAN chair: consider to have it as a RAN4 led WI
ALU: should be rather a SI than a WI
RAN chair: it's a fair request to clarify the use cases, so from operators we could have a list what they are requesting
conclusion: noted, should be RAN4 led, SI or WI is to be discussed, and come back in March 16, list of actual use cases from operators should be brought where this is beneficial

RP-151889 New work item proposal: bandwidth flexibility for LTE Huawei, HiSilicon WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1;
conclusion: postponed

V2V for LTE

RP-151942 Motivation for WI on " Support for V2V services based on LTE sidelink" LG Electronics, Huawei, HiSilicon, CATT discussion motiv Rel-14 -
discussion: Orange: V2V over PC5 possible, was this evaluated in RAN1?
LG: yes
Telecom Italia: does not think that there is already a clear conclusion from the SI
conclusion: noted

RP-151943 New WI proposal: Support for V2V services based on LTE sidelink LG Electronics, Huawei, HiSilicon, CATT WID new RAN1 Rel-14 -
conclusion: revised in RP-152200

RP-152200 New WI proposal: Support for V2V services based on LTE sidelink LG Electronics, Huawei, HiSilicon, CATT WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; MCC: there is an ongoing REL-14 WI FS_LTE_V2X
discussion: Sprint: looking at co-existence issues planned?

LG: transmission of RF will include co-existence aspects
RAN1 chair: what is the minimum requirement of the WI? so that we have a realistic scope
conclusion: revised in RP-152254

RP-152254 New WI proposal: Support for V2V services based on LTE sidelink LG Electronics, Huawei, HiSilicon, CATT WID new RAN1 Rel-14-
revision of RP-152200; new WI for LTE only; leading WG: RAN1; WI code to be used: LTE_SL_V2V;
MCC: there is an ongoing REL-14 WI FS_LTE_V2X;
discussion: AT&T: please add us as supporting company
RAN1 chair: concerned that for V2V scope is still very wide and not consistent with TUs
RAN chair: resource allocation and synchroni sation is too big,
remove 4. and 5. and focus un dedicated spectrum only would be my preference
LG: how many TUs would we need to cover this scope?
Huawei: if we reduce more, we may not have a complete feature anymore
Ericsson: increasing TUs makes sense, 4TUs reasonable
RAN1 vice-chair (ALU): agrees, 4 or 5TUs would be more realistic
Qualcomm: we have no problem with down-scoping
Nokia Networks: we would support increasing TUs
RAN1 chair: worried that some companies complain about unrealistic time units only if they are not interested in the WI
ALU: we can increase TUs or reduce scope but more comments were in favour of increasing TUs
conclusion: revised in RP-152269

RP-152269 New WI proposal: Support for V2V services based on LTE sidelink LG Electronics, Huawei, HiSilicon, CATT WID new RAN1 Rel-14-
conclusion: revised in RP-152293

RP-152293 New WI proposal: Support for V2V services based on LTE sidelink LG Electronics, Huawei, HiSilicon, CATT WID new RAN1 Rel-14-
discussion: RAN chair: which TUs did you increase?
LG: from 2 TUs to 3TUs
Ericsson: for 1 quarter we increased by 1 TU and we are now confident that we will be able to finish the work with that?
Telecom Italia: concerned about this approach
RAN chair: RAN1 chair is ok with this
Nokia Networks: where are we now after approving LAA and V2V in terms of remaining RAN1 capacity?
RAN chair: 2 TUs left
Nokia Networks: 7 TUs were free and 7 are used or not?
RAN chair: no originally 9 TUs left, 2 TUs were from 5G channel modelling
conclusion: approved

RP-151881 Motivation for new WI on LTE-based V2V Huawei, HiSilicon discussion motiv Rel-14-
discussion: Huawei: project in China which is described only in Chinese
conclusion: noted

discussion of RP-151942/RP-152200/RP-151881:
Orange: what does China consider: V2V over PC5 or V2V in general?
Huawei: with direct communication
Orange: what does China consider: V2V or V2X?
Huawei: V2V and V2I
Orange: this should be well coordinated over whole 3GPP
RAN chair: LG is taking care of this
Orange: in some SA groups they just study so far
Huawei: interoperability testing required in the Chinese project so specifications are needed
LG: would actually better if RAN1 studies first
Vodafone: we are interested in V2X but V2V is an important component so we should move forward
Nokia Networks: study phase for looking at the detailed objectives needed
Qualcomm: co-existence study with unknown technique can delay the whole topic
Huawei: time budget in RAN1 for the SI for very reasonable and we discussed already several aspects in the SI

Flexible duplex:

RP-151939 Motivation for SI on "flexible duplex operation for E-UTRAN", flexible duplex– towards 5G efficient duplex mechanisms LG Electronics discussion motiv Rel-14-

discussion: Telecom Italia: in how far is co-existence considered here?
RAN chair: main point is to study co-existence aspects
Orange: we should clarify that in some areas of the world this is not possible
RAN chair: we can copy the results of the regulatory SI into this SI
Qualcomm: objective 2 is very unclear
China Telecom; has strong demand for this also for UL and thinks the regulatory SI showed that it is possible
Sprint: in region 2 it will be problematic

conclusion: noted

RP-151940 New SID: Study on flexible duplex operation for E-UTRAN LG Electronics, China Telecom SID new RAN1 Rel-14-

ew SI for LTE only; leading WG: RAN1; WI code to be used: FS_LTE_flex_duplex; compare RP-151310

conclusion: revised in RP-152288

RP-152288 New SID: Study on flexible duplex operation for E-UTRAN LG Electronics, China Telecom SID new RAN1 Rel-14-

conclusion: postponed

LAA for LTE:

RP-151979 Motivation for New Work Item on enhanced LAA for LTE Ericsson discussion motiv Rel-14-

Motivation for New Work Item on enhanced LAA for LTE

discussion: Broadcom: phasing for UL CA feature (RAN #70 - RAN #72) and Dual connectivity later: rationale?
Ericsson: to finish UL more quickly
NTT DOCOMO: DL part unclear, what kind of interference mitigation scheme do you consider?
LG: we did not study Dual Connectivity aspect in the SI, scope is very brought, what is the intention?
Ericsson: study was more on co-existence and dual connectivity does not impact this
RAN3 chair: how do you manage GBR without RAN3?
Huawei: Dual Connectivity was not part of the study, so agrees with LG
Orange: use and deployment scenario from operators for this?

conclusion: noted

RP-151978 New Work Item on enhanced LAA for LTE Ericsson WID new RAN1 Rel-14-

new WI for LTE only; leading WG: RAN1; WI code to be used: LTE_eLAA; follow-up WI of REL-13 WI LTE_LAA

conclusion: revised in RP-152256

RP-152256 New Work Item on enhanced LAA for LTE Ericsson WID new RAN1 Rel-14-

revision of RP-151978; new WI for LTE only; leading WG: RAN1; WI code to be used: LTE_eLAA; follow-up WI of REL-13 WI LTE_LAA;

discussion: Blackberry: addition of 10MHz bandwidth is for a very specific deployment or co-existence issues would need to be considered
Broadcom: add RAN1 to this bullet, this would solve it
Orange: technical contents is stable but time unit request is still unrealistic and needs to be adjusted
Ericsson: we discussed the TUs with RAN1 and RAN4 chairman
Telecom Italia: we are fed up by having unrealistic numbers
Orange: scope has been reduced but length of WI was reduced
Qualcomm: RAN1 added to the bullet, should be RAN4 first and then RAN1
RAN chair: we could say: "not more than 50% overshoot of the allocated TUs"
ALU: clarification on 50% rule needed? applies for all WIs, limitation also for offline sessions?
RAN chair: yes, all WIs but we do not count what companies do offline
RAN2 chair: will track how much times are used per WI
Nokia Networks: offline discussion is a discussion in the coffee break but not an extra meeting room for hours
RAN chair: agrees

Orange: we need clear guidelines from RAN
RAN chair: wants to leave this to WG chairs
conclusion: revised in RP-152266 to add RAN1

RP152266 New Work Item on enhanced LAA for LTE Ericsson WID new RAN1 Rel-14 -
conclusion: revised in RP-152272

RP-152272 New Work Item on enhanced LAA for LTE Ericsson WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; WI code to be used: LTE_eLAA; follow-up WI of REL-13 WI LTE_LAA
conclusion: approved

RP-151886 Motivation and scope of Rel-14 work on LAA Huawei, HiSilicon discussion motiv Rel-14 -
conclusion: noted

RP-151824 Motivation for WI on enhanced LAA for LTE Qualcomm Incorporated discussion motiv Rel-14 - Related to WID new RP-151800
conclusion: withdrawn

RP-151800 New Work Item on enhanced LAA for LTE Qualcomm Incorporated WID new RAN1 Rel-14 - new WI for LTE only; leading WG: RAN1
conclusion: withdrawn

RP-151725 Supporting dual connectivity in LAA ZTE Corporation discussion Rel-14 -
conclusion: noted

RP-151975 On LTE LAA evolution in Rel. 14 Nokia Networks discussion Rel-14 -
conclusion: noted

discussion of RP-151979/RP-151978/RP-151725/RP-151975:
Orange: which sort of cost reduction can we achieve?
Nokia Networks: with LAA you are roughly limited to 1W so tx power
LG: split bearer or SC bearer supported?
Nokia Networks: assumes both
Verizon: considers dual connectivity for REL-14
Qualcomm: to Orange comment: if it was useful for licensed and why should this be differen for unlicensed?
Huawei: UL for LAA SCell has higher priority for us and there seem to be consensus for this
Vodafone: Dual Connectivity could be considered later

Multiuser Superposition Transmission/Interference Cancellation:

RP-151925 Motivation on New WI Proposal for MUST MediaTek Inc. discussion motiv Rel-14 -
conclusion: noted

RP-151926 New Work Item Proposal: Downlink Multiuser Superposition Transmission for LTE MediaTek Inc. WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; follow-up WI of SI FS_LTE_MUST
conclusion: revised in RP-152207

RP-152207 New Work Item Proposal: Downlink Multiuser Superposition Transmission for LTE MediaTek Inc. WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; follow-up WI of SI FS_LTE_MUST
conclusion: revised in RP-152265

RP-152265 New Work Item Proposal: Downlink Multiuser Superposition Transmission for LTE MediaTek Inc. WID new RAN1 Rel-14 -
discussion: Nokia Networks: is like a receiver enhancement and RAN4 budget has to be checked; also some text was removed from WID
Mediatek: not much work in RAN4 forseen, anyway RAN1 discussion needed first, so RAN4 TU allocation is reasonable
Ericsson: 0.5 TU is not enough for RAN4, you need at least 1TU; a lot of discussion expected about which parameters can be detected blindly
ALU: outcome of SI was that gains are not so high and occur in network conditions that are very special
RAN chair: SI was not very conclusive
NTT DOCOMO: we are interested in this feature

Orange: we were supporting the SI but think now that it is not high priority
Qualcomm: there were also concerns on the value of the WI
RAN chair: understood but there are also a big number of supporters
Nokia Networks: we wanted to look also at other receiver enhancements and this discussion did not happen so far

conclusion: revised in RP-152289

RP-152289 New Work Item Proposal: Downlink Multiuser Superposition Transmission for LTE MediaTek Inc. WID new RAN1 Rel-14 -

discussion: Nokia Networks: is this really operators' priority?
Orange: is lower priority, no need to start it now where priority is on REL-13
Telecom Italia: concerned that there seems to the intention to squeeze now 4 new RAN1 WIs in during a quarter where REL-13 should have highest priority
Samsung: unclear regarding of sequence of work in different WGs
Qualcomm: multiple power ratios not needed
RAN1 vice-chair (ALU): downselection cannot be done in RAN1, this is a RAN job
Huawei: still thinks this can be done in RAN1
T-Mobile USA: this topic is lower priority for us
Ericsson: agrees with ALU that downselection is a RAN task and also does not see a need to start this WI now
Mediatek: remaing part is about details within one category so we downselected already
ZTE: MUST and MIMO are orthogonal so different things
Telecom Italia: this is rather a SI than a WI; suggest to continue the SI
RAN chair: suggest to have a RAN email discussion to converge by March 16
Mediatek: we have 35 supporting companies and we have reduced the scope already as much as we can
Samsung: Core part is planned to be completed by Q2/2016 so there seems to be still some space to start the WI later and still complete it in REL-14
Huawei :who is really objecting to this WI?
Ericsson: are we asking then also for the other WIs who will object?
RAN chair:

conclusion: postponed, RAN email discussion to clarify scope and objectives

RP-151882 Motivation for new WI on multiuser superposition transmission for LTE Huawei, HiSilicon discussion motiv Rel-14 -

discussion: RAN chair: so mostly in line with Mediatek proposal
ZTE: downelection of multiuser superposition planned in WI?
Huawei: at the beginning of the WI

conclusion: noted

RP-151746 Motivation for New Study Item Proposal: Multi-User Interference Cancellation for LTE China Mobile Com. Corporation discussion motiv Rel-14 -

conclusion: noted

RP-151747 New Study Item Proposal: Study on Multi-User Interference Cancellation for LTE China Mobile Com. Corporation SID new RAN1 Rel-14 -

new SI for LTE only; leading WG: RAN1; WI code not yet allocated, no TR needed?

discussion: ALU: RP-152005 and RP-152006 are related as well

conclusion: postponed

RP-152006 Motivation on New WI Proposal for Enhanced Downlink Multiuser MIMO Transmission for LTE Nokia Networks discussion motiv Rel-14 -

under RAN4 leadership (see AI 14.1.4)

conclusion: noted

RP-152005 New work item proposal: Enhanced Downlink Multiuser MIMO Transmission for LTE Nokia Networks WID new RAN4 Rel-14 -

under RAN4 leadership (see AI 14.1.4)

new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_DL_MUMIMO; under which WI was DL Multiuser MIMO introduced?

discussion: AT&T: looks a bit more like a study is needed

conclusion: postponed

discussion of the Multiuser Superposition Transmission/Interference Cancellation proposals:
Vodafone: a lot of MIMO proposals and we are not sure about the gains
RAN chair: MIMO proposals are coming later
ALU: actually there are some links between these WIs here and the MIMO proposals
Ericsson: assumptions for MUST not relatistic as considered operating point is not what we see in today's networks
ZTE: superposition topics and MIMO topics need to be seperated
ALU: suggessts to have an email discussion to see where are the remaining MIMO gains as we had a number of MIMO WIs in the past and agrees that for the superposition proposal the operating point where the gains are shown is not realistic
RAN chair: email discussion about the gains is a good idea
Huawei: history for MUST: a SI was discussed for superposition and IC and then IC was removed from the SI but now it is proposed for a WI

MIMO enhancements:

RP-151857 Motivation for New WI Proposal: Enhancements on Full-Dimension (FD) MIMO for LTE Samsung discussion motiv Rel-14- related to RP-151856
discussion: Samsung: larger number of CSI support was already studied although we went at the end just for 16 antenna ports, so we do not think we need another SI phase
RAN 1chair: recommends to reduce the wide scope of this
conclusion: noted

RP-151856 New WI Proposal: Enhancements on Full-Dimension (FD) MIMO for LTE Samsung WID new RAN1 Rel-14-
ew WI for LTE only; leading WG: RAN1; WI code to be used: LTE_eFDMIMO; follow-up WI of REL-13 WI LTE_EBF_FDMIMO-Core
discussion: Qualcomm: reason for 3rd bullet (Uplink DRMS...) unclear
ALU: agrees with Qualcomm
Intel: shares the view that scope needs to reduced and the baseline needs to be clarified
conclusion: revised in RP-152262

RP-152262 New WI Proposal: Enhancements on Full-Dimension (FD) MIMO for LTE Samsung WID new RAN1 Rel-14-
discussion: Huawei: addition on further issue but then reduction of time units, proposal will realistically need 5TUs
Samsung: was not an extension of scope but a clarification that it was already included in the past; scope is narrowed down
Intel: TUs were even further reduced, does not agree with this
Vodafone: operators have no common understanding what they get from this WI
RAN chair: what about an email discussion until March to converge on the scope and operator interests?
Samsung: different companies have different interests, so email discussion will not help
RAN chair: some companies need clarifications on the gains of the different components
conclusion: revised in RP-152287

RP-152262 New WI Proposal: Enhancements on Full-Dimension (FD) MIMO for LTE Samsung WID new RAN1 Rel-14-
discussion: Huawei: is still a huge WI so we would like to have it approved
Qualcomm: unclear why UL-DMR was not deleted? should not impact UL
NTT DOCOMO: supports it but still needs some down scoping
Nokia Networks: is it just removing this UL part would is needed to approve this WI
NEC: 2TUs not realistic
ZTE: WI is unreasonable, things are added in a WI that are not studied so far
CATT: ZTE co-signed the previous version and this one is a subset
Telecom Italia: suggests to not approve this WI and focus on REL-13 completion
conclusion: revised in RP-152287

RP-152287 New WI Proposal: Enhancements on Full-Dimension (FD) MIMO for LTE Samsung WID new RAN1 Rel-14-
revision of RP-152262; new WI for LTE only; leading WG: RAN1; WI code to be used: LTE_eFDMIMO; follow-up WI of REL-13 WI LTE_EBF_FDMIMO-Core;
conclusion: postponed, RAN email discussion about the scope etc. until RAN #71

RP-151839 Motivation for the new work item proposal: Rel-14 Enhanced MIMO beamforming CATT discussion motiv Rel-14- motivation for RP-151838;

conclusion: revised in RP-152180

RP-152180 Motivation for the new work item proposal: Rel-14 Enhanced MIMO beamforming for LTE CATT discussion motiv Rel-14 -
revision of RP-151839; motivation for RP-152179
conclusion: noted

RP-151883 Motivation for new SI on Enhanced MIMO beamforming Huawei, HiSilicon discussion motiv Rel-14 -
conclusion: withdrawn

RP-151838 Rel-14 New Work Item on Enhanced MIMO beamforming for LTE CATT WID new RAN1 Rel-14 -
conclusion: revised in RP-152179

RP-152179 Rel-14 New Work Item on Enhanced MIMO beamforming for LTE CATT WID new RAN1 Rel-14 -
revision of RP-151838; new WI for LTE only; leading WG: RAN1;
conclusion: postponed

RP-151888 Motivation for new work item on Massive Beamforming for Scell Coverage Huawei, HiSilicon discussion motiv Rel-14 - Motivation for RP-151887
conclusion: noted

RP-151887 New work item proposal: Massive Beamforming for Scell Coverage in LTE Huawei, HiSilicon WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1;
conclusion: postponed

RP-151960 Future work on FD-MIMO and AAS Ericsson discussion Rel-14 -
discussion: Huawei: Tdoc is related to AAS, better separate AAS and MIMO proposal
conclusion: noted

D2D enhancements/wearables

RP-151754 Motivation for SI: Further LTE D2D enhancement for eMBB and wearables Intel Corporation discussion motiv Rel-14 -
conclusion: noted

RP-151753 New SI proposal: Study on further LTE D2D enhancement for eMBB and wearables Intel Corporation SID new RAN1 Rel-14 -
new SI for LTE only; leading WG: RAN1; WI code to be used: FS_LTE_e2D2D
discussion: Intel: also Sony is supporting this SI proposal and needs to be added in the next revision
conclusion: revised in RP-152221

RP-152221 New SI proposal: Study on further LTE D2D enhancement for eMBB and wearables Intel Corporation SID new RAN1 Rel-14 -
new SI for LTE only; leading WG: RAN1; WI code to be used: FS_LTE_e2D2D;
conclusion: postponed

RP-151934 Wearable Devices based on LTE technologies Huawei, HiSilicon discussion Rel-14 -
conclusion: noted

RP-151971 Discussion on D2D enhancements for LTE in Rel-14 Huawei, HiSilicon discussion Rel-14 -
discussion: AT&T: how could a user opt out from unintended power loss when used as relay?
Huawei: will have to be considered
conclusion: noted

RAN2 led proposals of AI 14.1.2:

(RP-151946, RP-151948, RP-151947, RP-152009, RP-152007 were originally submitted under AI 14.1.2, but they were moved here as related to the other D2D enhancements proposals)

RP-151946 Motivation for WI on D2D based MTC Qualcomm Incorporated discussion motiv Rel-14 -
Motivation paper for new WI proposal on D2D based MTC
discussion: Telecom Italia: which kind of devices are targeting?
Qualcomm: low cost and enhancement for link budget but no specifc air interface
conclusion: noted

RP-151948 New WI proposal on D2D based MTC Qualcomm Incorporated WID new RAN2 Rel-14 -
new WI for UTRA and LTE?; leading WG: RAN2
conclusion: postponed

RP-151947 Motivation for new SI on enhanced connectivity for companion device LG Electronics discussion motiv Rel-14 -
conclusion: noted

RP-151949 New SI proposal: Study in enhanced connectivity for companion device LG Electronics SID new RAN2 Rel-14 -
MCC: Tdoc not available on the day before RAN; unclear whether for UTRA & LTE
conclusion: postponed

RP-152009 D2D Communication for commercial use cases ZTE Corporation discussion Rel-14 -
Motivation paper for a new WI on D2D Communication for commercial use cases
conclusion: noted

RP-152007 D2D Communication for commercial use cases ZTE Corporation WID new RAN2 Rel-14 -
new WI for LTE only; leading WG: RAN2
conclusion: postponed

discussion about D2D enhancement/wearables Tdocs:
RAN chair: we will not approve multiple WIs on this topic so we need to converge on some commonalities
Telecom Italia: related to ZTE: impact on legal interception needs to be checked
LG: sidelink enhancements for unicast can mean duplication of work with V2V, so better focus on 2nd point: UE to relay operation in REL-14
RAN chair: today we discuss here on LTE enhancements, 5G will be handled on Tue morning
Mediatekl: Intel, Huawei refer to SA1 requirements that do not exist, SA1 is having a study with 4 different substudies so taking conclusions now would be premature
Broadcom: most of the work belongs to SA2 not to RAN
Qualcomm: doubts that positioning should be addressed (Intel proposal)
RAN chair: try to converge, we will check during the week

eMBMS for digital TV:

RP-151916 Motivation for eMBMS enhancements for LTE Ericsson discussion motiv Rel-14 -
This paper motivates the RAN Work Item in RP-15914 about MBMS enhancements in order to satisfy the requirements identified in SA1 with the goal of enabling TV service support by 3GPP networks.
discussion: Telecom Italia: proposal is merging very different demands so we need to have a realistic scope
Orange: is a too premature WI, SA2 has just started to look into the use cases, if we need to start something already in RAN it should be a SI; it is also not clear whether operating MBMS over a standalone SDL is allowed from a regulatory view point
RAN chair: Huawei can check how single cell-PTM could address the use case
EBU: for us it is an important WI and an important market and therefore we are co-signing and supporting this WI
AT&T: also supports this WI
LG: would be better to address this in 5G
Dish: support this proposal, SA studies are less RAN centric
LG: longer cyclic prefix for unicast as well? objective c. and d.: difference unclear
Ericsson: longer CP only considered for the broadcast part, we do not propose a new frame structure
Telefonica: supports this WI
conclusion: noted

RP-151914 New WI proposal: eMBMS enhancements for LTE Ericsson, Qualcomm, Nokia, EBU WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; this RAN1 WI will enhance MBMS in order to satisfy the requirements identified in SA1 with the goal of enabling TV service support by 3GPP networks
conclusion: revised in RP-152273

RP-152273 New WI proposal: eMBMS enhancements for LTE Ericsson, Qualcomm, Nokia, EBU WID new RAN1 Rel-14-

discussion: Orange: has strong concern to start RAN work in an area where SA work has not completed their work (SA1 is ongoing, SA2 has done nothing so far), so we are objecting based on the time line (and not based of contents)
Huawei: still missing something in the WI
Ericsson: unicast and SC-PTM is already there, what is missing is the broadcast
Qualcomm: if this would be a SI instead of WI, would this be acceptable?
Orange: starting a SI in March 16 would be acceptable so that use cases can be looked at before
RAN chair: email discussion about scope to see what we can start in March?
Huawei: this MBMS WI and the MIMO WI have different status; MBMS part is less mature and seems to have bigger RAN2 impacts
Telecom Italia: supports Huawei that an email discussion on this topic does not make sense
AT&T: eMBMS is not a new topic so you are enhancing something, so waiting for SA1 does not make sense
Ericsson: agrees, SA1 is still working on use cases (but this seems to be the main use case) and SA2 is working on architectural changes
LG: wonders what the market interest is; sees also a regulatory issue
EBU: anonymous broadcast is an important issue so removing it is not a good approach, public and commercial broadcasting is a big market; we were supporting RP-151914 but we do no longer support the current version RP-152273, because the essence, i.e. the free-to-air or ananymous reception issue, has been deleted
Nokia Networks: wonders why the use case was not an issue for LG 15 months ago
Telecom Italia: new codecs, inter-site distance of 15km: so use cases are quite different compared to what we had in the past, that's why SA work is useful before
Orange: SA1 should decide which use cases should be followed and SA2 can then look at architectural impacts
RAN chair: for this email we will have an email discussion until March 16
LG: we should also discuss regulatory impacts
RAN chair: can be done in email discussion as well

conclusion: postponed, email discussion on RAN reflector between RAN #70 and RAN #71 to discuss the scope/use cases of this topic more

dense small cells/COMP:

RP-151790 Motivation of study on further enhancement for densely deployed small cell in LTE ZTE Corporation discussion motiv Rel-14-

motivation paper on SID further enhancement for densely deployed small cell in LTE

discussion: AT&T: fig.4 up and down unclear; you would put a faster moving UE rather on the macro cell
ZTE: is not about fast moving UEs but about switches between macro and small cell
ALU: is overlapping with COMP enhancements
Intel: agrees that it is overlapping with our WI (RP-151756/RP-151755) in several parts

conclusion: noted

RP-151791 New study on Study on enhancements of densely deployed small cells in LTE ZTE Corporation SID new RAN1 Rel-14-

moved from AI 15.1 to AI 14.1.1; compare RP-151194; new SI for LTE only; leading WG: RAN1; WI code to be used: FS_LTE_dense_SC

conclusion: revised in RP-152270

RP-152270 New study on Study on enhancements of densely deployed small cells in LTE ZTE Corporation SID new RAN1 Rel-14-

conclusion: postponed

RP-151756 Motivation for SI: Further enhancements to Coordinated Multi-Point (CoMP) and seamless mobility schemes Intel Corporation discussion motiv Rel-14-

conclusion: noted

RP-151755 New SI proposal: Study on Further enhancements to Coordinated Multi-Point (CoMP) and seamless mobility schemes for LTE Intel Corporation SID new RAN1 Rel-14-

new SI for LTE only; leading WG: RAN1; WI code to be used: FS_LTE_eCOMP_mob

conclusion: revised in RP-152222

RP-152222 New SI proposal: Study on Further enhancements to Coordinated Multi-Point (CoMP) and seamless mobility schemes for LTE Intel Corporation SID new RAN1 Rel-14 -
new SI for LTE only; leading WG: RAN1; WI code to be used: FS_LTE_eCOMP_mob;
conclusion: postponed

Lean carrier (CRS light):

RP-151983 Motivation for New Work Item on Lean Carrier for LTE Ericsson discussion motiv Rel-14 -
Motivation for New Work Item on Lean Carrier for LTE
conclusion: noted

RP-151982 New Work Item on Lean Carrier for LTE Ericsson WID new RAN1 Rel-14 - new WI for LTE only; leading WG: RAN1; WI code to be used: LTE_LC
conclusion: postponed

UL enhancements:

RP-151744 Motivation for New Work Item Proposal: UL Capacity Enhancement for LTE China Mobile Com. Corporation discussion motiv Rel-14 -
discussion: NEC: UL256QAM proposal from Ericsson is very similar
conclusion: noted

RP-151745 New Work Item Proposal: UL Capacity Enhancement for LTE China Mobile Com. Corporation WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; MCC: WI has no spec impact
conclusion: revised in RP-152223

RP-152223 New Work Item Proposal: UL Capacity Enhancement for LTE China Mobile Com. Corporation WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; MCC: WI has no spec impact?
conclusion: postponed

RP-151981 Motivation for New Work Item on Uplink 256QAM for LTE Ericsson discussion motiv Rel-14 -
Motivation for New Work Item on Uplink 256QAM for LTE
conclusion: noted

RP-151980 New Work Item on Uplink 256QAM for LTE Ericsson WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1; WI code to be used: LTE_UL_256QAM
conclusion: postponed

HSPA enhancements:

RP-151894 Motivation for new SI on Multi-Carrier Enhancements for UMTS Huawei, HiSilicon, China Unicom discussion motiv Rel-14 -
Motivation for RP-151893
discussion: Telecom Italia: impacts on other WGs?
Huawei: has also TUs for RAN2 in next quarter but this can be discussed; no RAN4 impact forseen so far
Nokia Networks: from RAN2 we would like to have ASN.1 done first in next quarter, also just 3 supporting companies so far
conclusion: noted

RP-151893 New SI proposal: Study on Multi-Carrier Enhancements for UMTS Huawei, HiSilicon, China Unicom SID new RAN1 Rel-14 -
new SI for UTRA only; leading WG: RAN1; only 3 supporting companies
conclusion: revised in RP-152227

RP-152227 New SI proposal: Study on Multi-Carrier Enhancements for UMTS Huawei, HiSilicon, China Unicom SID new RAN1 Rel-14 -
revision of RP-151893; new SI for UTRA only; leading WG: RAN1; WI code to be used: FS_UTRA_MCe
discussion: Huawei: has only RAN1 impact
conclusion: was at first approved but later revised in RP-152290 (to correct time budget)

RP-152290 New SI proposal: Study on Multi-Carrier Enhancements for UMTS Huawei, HiSilicon, China Unicom SID new RAN1 Rel-14 -
conclusion: approved

RAN chair: we have by far more WI/SI proposals that we can accomodate, we will see later how much RAN1 time budget is left for new WIs/SIs; companies are invited to converge and to come with a way forward paper; we will come back on Thu and if there are early proposals we may open it already

Way forwards for 14.1.1:

RP-152242 Way Forward on Rel-14 RAN1-led Work Items NTT DOCOMO, AT&T, CATR, CATT, KDDI, LGE, Huawei, HiSilicon, MediaTek, NEC, Samsung, Sharp, Softbank, ZTE discussion Rel-14-

Propose the following items to be approved with reduced scope except for V2V
LAA
V2V (RP-152254)
MUST
WI covering MIMO aspect

All these items have no impact on RAN2/3 in Q1
Note that the following TUs are needed in RAN4 in Q1
V2V: 1TU (R4RF C) and 1TU (R4RD C)
MUST: 0.5TU (R4RD C)

discussion: NTT DOCOMO: also supported by Verizon
Telecom Italia: how many TUs are left in RAN1?
RAN1 chair: 7 TUs
Ericsson: excluding 5G channel modelling?
RAN1 chair: yes, otherwise 9 TU
Sprint: how to address RAN2, RAN4 overload?
RAN chair: we will start in RAN1, then RAN2, RAN3, RAN4 will come later

conclusion: noted

RP-152230 Proposed Way Forward on LTE Rel-14 at RAN #70 Qualcomm, Ericsson, Nokia Networks, Alcatel-Lucent, AT&T, Dish, Telstra, EBU, Fraunhofer IIS, Sequans discussion Rel-14-

proposal: Approve the following
Enhanced LAA for LTE (RP-15xxxx): 5 TUs in RAN1
Support for V2V services based on LTE sidelink (RP-15xxxx): 2 TUs in RAN1
eMBMS enhancements for LTE (RP-15xxxx): 2 TUs in RAN1

discussion: Orange: worried about MBMS as SA ...
Sprint:

conclusion: noted

RP-152255 Alternative way forward on RAN1 led WIs/SIs KT, Telecom Italia, Orange, Intel, DT, Vodafone discussion Rel-14-

proposal:
Approve 2 new RAN1-led WIs which have common interests from both way forwards:
LAA enhancement
V2V
More TU to be allocated to followings:
Maintenance of Rel-13 specifications
Above 6GHz Channel Modeling

discussion: RAN chair: wants to avoid trading LTE evolution against 5G
Vodafone: suggests to go for the 2 WIs
DT: it seems we can decide already on 2 topics which are common to all 3 proposals
Huawei: supports Vodafone and DT
NTT DOCOMO: also number of supporting companies to be taken into account
Telecom Italia: for LAA there is still CR open
Orange: TUs are again too optimistic; LAA consumed double the number of TUs in the past, also V2V TUs are too optimistic
Telecom Italia: does not want to agree now on 2 proposals and on Thu evening we squeeze in further WIs
RAN1 chair: suggests also scope reductions
Nokia Networks: 1TU WIs never worked out, extreme case was 1 TU that took 15 hours of meeting time
Ericsson: wonders RAN4 led WI that is now a RAN1 led WI
Mediatek: MUST is not really RAN4 it is for RAN1
Nokia Networks: receiver enhancements without RAN4 involvement is not realistic

ALU: 1 TU for MUST is unrealistic
KT: we need to be honest that time budget handling on WG level never worked out properly, so we should only approve 2 WIs
RAN1 chair: we really have to look at the scope to avoid the fish market
RAN chair: so tomorrow we will open LAA, V2V, MUST, MIMO and MBMS WIDs and check the scope and TUs
Vodafone: we reduced the scope already for LAA
Orange: for LAA 10TUs per meeting were used in the past, so 5TUs are not fitting
RAN1 chair: that's why I suggested scope reduction
Samsung: it seems completion dates of some proposals are much before the freeze of the REL
Nokia Networks: Dual connectivity was removed from LAA although a number of companies were supporting it, so that it can be considered later
Samsung: so there is a plan to have dual connectivity in REL-14, if not then we should correct the LAA target date to later
ALU: does not think LAA can be reduced further in scope
RAN1 chair: scope reduction was meant for V2V
Ericsson: for LAA, UL was done part of REL-13 and we therefore try to finish it earlier in REL-14
Samsung: it will not be sufficient to finish L1 part early in REL-14 if then higher layers take longer
RAN chair: could consider an email discussion on MIMO aspects
Dish: would like to consider MUST, MIMO and MBMS with equal prio
RAN chair: we could do this, please RAN1

conclusion: noted, offline discussion until Thu, we will then open LAA, V2V, MUST, MIMO and MBMS WIDs (in this sequence) and check the scope and TUs in order to take decisions

Thursday:
RAN chairman: As discussed on Wed we will discuss for approval the 5 items that were identified yesterday as high priority at this meeting. We will start first from the 2 items that had broader support (i.e. they were in the 3 WFs), LAA and V2V. Then open MUST, MIMO and eMBMS.

Items with less than 4 supporters: will be treated if time allows:

RP-151885 Motivation for new SI on New LTE Frame Structure for TDD Huawei, HiSilicon discussion motiv Rel-14 -

RP-151884 New study item proposal: Study on New LTE Frame Structure for TDD Huawei, HiSilicon SID new RAN1 Rel-14 -
new SI for LTE only; leading WG: RAN1; only 2 supporting companies
conclusion: both not treated

RP-151892 Motivation for new WI proposal: Advanced Carrier Aggregation Techniques for LTE Huawei, HiSilicon discussion motiv Rel-14 -
Motivation for RP-151891

RP-151891 New WI proposal: Advanced Carrier Aggregation Techniques for LTE Huawei, HiSilicon WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1;
conclusion: both not treated

RP-151758 Motivation for SI: Uplink non-orthogonal transmission for small data Intel Corporation discussion motiv Rel-14 -

RP-151757 New SI proposal: Study on Uplink non-orthogonal transmission for small data for LTE Intel Corporation SID new RAN1 Rel-14 -
new SI for LTE only; leading WG: RAN1; only 1 supporting company
conclusion: both not treated

RP-152208 Uplink multi-user transmission for massive MTC ZTE Corporation discussion Rel-14 -
related to RP-151757
conclusion: not treated

RP-151974 Motivation for Further Enhanced Machine-Type Communications for LTE Ericsson discussion motiv Rel-14 -
RP-151973 New WI: Further Enhanced Machine-Type Communications for LTE Ericsson WID new RAN1 Rel-14 -
new WI for LTE only; leading WG: RAN1
conclusion: both not treated

14.1.2 WIs/SIs led by RAN2

treated under AI 14.1.1:

RP-151946 Motivation for WI on D2D based MTC Qualcomm Incorporated discussion motiv Rel-14 -
Motivation paper for new WI proposal on D2D based MTC
RP-151948 New WI proposal on D2D based MTC Qualcomm Incorporated WID new RAN2 Rel-14 -
new WI for UTRA and LTE?; leading WG: RAN2
RP-151947 Motivation for new SI on enhanced connectivity for companion device LG Electronics discussion motiv Rel-14 -
RP-151949 New SI proposal: Study in enhanced connectivity for companion device LG Electronics SID new RAN2 Rel-14 - MCC: Tdoc not available on the day before RAN; unclear whether for UTRA & LTE
RP-152009 D2D Communication for commercial use cases ZTE Corporation discussion Rel-14 -
Motivation paper for a new WI on D2D Communication for commercial use cases
RP-152007 D2D Communication for commercial use cases ZTE Corporation WID new RAN2 Rel-14 -
new WI for LTE only; leading WG: RAN2

Indoor positioning:

RP-152012 Motivation for new WI proposal: Further Indoor Positioning enhancements for UTRA and LTE NextNav discussion motiv Rel-14 -
conclusion: not treated

RP-152013 New work item proposal: Further Indoor Positioning enhancements for UTRA and LTE NextNav WID new RAN2 Rel-14 -
new WI for UTRA & LTE; leading WG: RAN2; follow-up of REL-13 WI UTRA_LTE_iPos_enh
conclusion: revised in RP-152252
RP-152252 New work item proposal: Further Indoor Positioning enhancements for UTRA and LTE NextNav WID new RAN2 Rel-14 -
revision of RP-152013; new WI for UTRA & LTE; leading WG: RAN2; follow-up of REL-13 WI UTRA_LTE_iPos_enh;
discussion: Ericsson: co-existence REL-13 work was not completed and is now moved to REL-14
RAN chair: if work starts in March, we should shift the approval to March
Huawei: yes, RAN1 issues can be discussed offline
RAN4 chair (Samsung): if we approve the WI in March 16, then we will have 2 Perf. parts ongoing on this, so consider carefully the time budgets
Qualcomm: as co-existence work will be done in REL-14 we can discuss this offline already to avoid similar problems in the future like we had with REL-13
Ericsson: RAT pressure sensors still included?
RAN chair: you can discuss this offline until March 16
conclusion: postponed until March 16

UMTS:

RP-152274 Way Forward for RAN2-led UMTS Work Items Huawei, HiSilicon, Ericsson discussion Rel-14 -
proposal: Approve 2 new RAN2-led WIs
RP-152286 DTX/DRX enhancements for CELL_FACH (RAN1/2/3)
RP-152267 RRC enhancements for UMTS (RAN2/3)
RAN1 work starts in Q1
RAN2/3 starts in Q2
discussion: Nokia Networks: we would approve a WI where there is no space in leading WG
NEC: where is RP-152267 coming from?
Ericsson: is a merge of RP-151999 and RP-152001
conclusion: noted, way forward endorsed

DTX/DRX Enhancements in CELL_FACH:

RP-151896 Motivation for new WI on DTX/DRX Enhancements in CELL_FACH Huawei, HiSilicon, China Unicom discussion motiv Rel-14 -
Motivation for RP-151895
conclusion: not trreated

RP-151895 New work item proposal: DTX/DRX Enhancements in CELL_FACH Huawei, HiSilicon, China Unicom WID new RAN2 Rel-14 -
new WI for UTRA only; leading WG: RAN2;
conclusion: revised in RP-152260

RP-152260 New work item proposal: DTX/DRX Enhancements in CELL_FACH Huawei, HiSilicon, China Unicom WID new RAN2 Rel-14 -
revision of RP-151895; new WI for UTRA only; leading WG: RAN2;
conclusion: revised in RP-152286

RP-152286 New work item proposal: DTX/DRX Enhancements in CELL_FACH Huawei, HiSilicon, China Unicom WID new RAN2 Rel-14 -
new WI for UTRA only; leading WG: RAN2;
conclusion: approved

RRC optimization for UMTS:

RP-152000 Motivation for WI Generic filtered UPH measurements for UMTS Ericsson discussion motiv Rel-14 -
conclusion: not treated

RP-151999 Generic filtered UPH measurements for UMTS Ericsson WID new RAN2 Rel-14 -
new WI for UTRA only; leading WG: RAN2
conclusion: merged into RP-152267

RP-152002 Motivation for WI RRC support for Simultaneous RAB setup and release for UMTS Ericsson discussion motiv Rel-14 -
conclusion: not treated

RP-152001 RRC support for Simultaneous RAB setup and release for UMTS Ericsson WID new RAN2 Rel-14 -
new WI for UTRA only; leading WG: RAN2
conclusion: revised in RP-152267

RP-152267 New WI proposal: RRC optimization for UMTS Ericsson WID new RAN2 Rel-14 -
new WI for UTRA only; leading WG: RAN2; WI code to be used: UTRA_RRCopt-Core; merging RP-151999 and RP-152001
conclusion: approved
Note: It was detected after RAN #70 that this WI has no time allocation for the next quarter and could have been started at RAN #71 instead of RAN #70 without problems. The approval of WIs/SIs that just start after a future RAN plenary has to be avoided in the future.

VoLTE:

RP-151749 Motivation for Study on Voice Codec Adaptation Enhancement for LTE China Mobile Com. Corporation discussion motiv Rel-14 -
motivation for RP-151750
conclusion: not treated

RP-151750 New SI proposal: Study on Voice Codec Adaptation Enhancement for LTE China Mobile Com. Corporation SID new RAN2 Rel-14 -
new SI for LTE only; leading WG: RAN2; WI code to be used: FS_LTE_VCA
conclusion: revised in RP-152224

RP-152224 New SI proposal: Study on enhancement of VoLTE China Mobile Com. Corporation SID new RAN2 Rel-14 -
revision of RP-151750 (note: The SI was renamed as it is merging also aspects of RP-152206); new SI for LTE only; leading WG: RAN2; WI code to be used: FS_LTE_eVoLTE;
conclusion: not treated

RP-151898 Motivation for new SI on VoLTE evolution for EVS full HD voice Huawei, HiSilicon, China Mobile, China Telecom discussion motiv Rel-14 -
Motivation for RP-151897
conclusion: not treated

RP-151897 New study item proposal: Study on VoLTE evolution for EVS full HD voice Huawei, HiSilicon, China Mobile, China Telecom SID new RAN2 Rel-14 -
new SI for LTE only; leading WG: RAN2; WI code to be used: FS_VoLTE_EVSHD
conclusion: revised in RP-152206

RP-152206 New study item proposal: Study on VoLTE evolution for EVS full HD voice Huawei, HiSilicon, China Mobile, China Telecom SID new RAN2 Rel-14 -
revision of RP-151897; new SI for LTE only; leading WG: RAN2; WI code to be used: FS_VoLTE_EVSHD;
conclusion: merged into RP-152224

Cell-specific Operation in CA:

RP-151796 Motivation for new WI on Cell-specific Operation in CA LG Electronics discussion motiv Rel-14 -
conclusion: not treated

RP-151795 New WI proposal on Cell-specific Operation in CA LG Electronics WID new RAN2 Rel-14 -
new WI for UTRA and LTE?; leading WG: RAN2
conclusion: not treated

SC-PTM enhancements for LTE:

RP-151900 Motivation for new WI on SC-PTM enhancements for LTE Huawei, HiSilicon discussion motiv Rel-14 -
Motivation for RP-151899
conclusion: not treated

RP-151899 New work item proposal: SC-PTM enhancements for LTE Huawei, HiSilicon WID new RAN2 Rel-14 -
new WI for LTE only; leading WG: RAN2;
conclusion: not treated

Signalling reduction for always-connected UEs in LTE:

RP-151902 Motivation for new WI on signalling reduction for always-connected UEs in LTE Huawei, HiSilicon discussion motiv Rel-14 -
Motivation for RP-151901
conclusion: not treated

RP-151901 New WI proposal: Signalling reduction for always-connected UEs in LTE Huawei, HiSilicon WID new RAN2 Rel-14 -
new WI for LTE only; leading WG: RAN2;
conclusion: not treated

Further Enhancement on LTE-WLAN Aggregation:

RP-151927 Motivation for Further Enhancement on LTE-WLAN Aggregation MediaTek Inc. discussion motiv Rel-14 -
conclusion: withdrawn

Improved Mobility for Synchronous LTE Networks:

RP-151969 Motivation for WI Improved Mobility for Synchronous LTE Networks (MobSync) Nokia Networks discussion motiv Rel-14 -
conclusion: not treated

RP-151968 New WI: Improved Mobility for Synchronous LTE Networks (MobSync) Nokia Networks WID new RAN2 Rel-14 -
new WI for LTE only; leading WG: RAN2; follow-up WI of REL-13 SI FS_LTE_LATRED
conclusion: not treated

Latency reduction for LTE:

RP-152015 Motivation slides for new WI proposal: L2 Latency reduction techniques for LTE Ericsson discussion motiv Rel-14-
new WI for LTE only; leading WG RAN2; related to SI FS_LTE_LATRED
conclusion: not treated

RP-152014 New WI proposal: L2 Latency reduction techniques for LTE Ericsson WID new RAN2 Rel-14-
new WI for LTE only; leading WG RAN2; follow-up WI of REL-13 SI FS_LTE_LATRED
conclusion: not treated

14.1.3 WIs/SIs led by RAN3

Context Aware Service Delivery in RAN:

RP-151751 Motivation for Study on Context Aware Service Delivery in RAN China Mobile Com. Corporation discussion motiv Rel-14-
conclusion: not treated

RP-151752 New SID proposal:Study on Context Aware Service Delivery in RAN China Mobile Com. Corporation SID new RAN3 Rel-14-
MCC: unclear whether SI is for UTRA & LTE; no TR needed? only 2 supporting companies
conclusion: not treated

HSPA and LTE Joint Operation:

RP-151877 Motivation for Study on HSPA and LTE Joint Operation China Unicom discussion motiv Rel-14-
conclusion: not treated

RP-151876 New SI Proposal: Study on HSPA and LTE Joint Operation China Unicom SID new RAN3 Rel-14-
new SI for UTRA & LTE; leading WG: RAN3; WI code to be used: FS_UTRA_LTE_JOP
conclusion: not treated

S1 interface based Dual Connectivity Extension for LTE:

RP-152209 Motivation for WI proposal S1 interface based Dual Connectivity Extension for LTE ZTE Corporation discussion motiv RAN3 Rel-14-
related to RP-152210
conclusion: not treated

RP-152210 New WI proposal: S1 interface based Dual Connectivity Extension for LTE ZTE Corporation, China Telecom WID new RAN3 Rel-14-
new WI for LTE only; leading WG: RAN3
conclusion: not treated

SON:

RP-151961 Possible areas for SON development in Rel.14 Nokia Networks discussion Rel-14-
conclusion: not treated

14.1.4 WIs/SIs led by RAN4

Way forward:

RP-152264 Way forward for RAN4 led WI in RAN#70 NTT DOCOMO, INC., Huawei, HiSilicon, , China Unicom, KDDI, China Mobile, KT, SK Telecom, CHTTL, CATT, Ericsson, Telstra, ATR, Potevio, Alcatel-Lucent, Alcatel-Lucent Shanghai Bell, SoftBank Corp., Telefonica, Acorn Technologies, Mitsubishi Electric Co., CATR, ETRI, ITRI, Media Tek, Sumitomo Elec. Industries, Ltd, NEC, China Telecom discussion Rel-14-
proposed way forward:
The following two WIs should be selected as candidate WIs to be approved in R#70 if the WID becomes stable.
- *RP-152205: Multi-Band Base Station testing with three or more bands*
- *RP-152264: New WI proposal: Performance enhancements for high speed scenario in LTE*

Note: The 2nd WI is in RP-152263 and not RP-152264.
discussion: RAN chair: RAN4 chair ok with this? seems so
Qualcomm: it should be at least be clarified that this will be handled with low priority
RAN chair: yes, this is confirmed
conclusion: noted, way forward was endorsed

high speed scenario in LTE:

RP-151903 Motivation for new WI on Performance enhancements for high speed scenario Huawei, HiSilicon, NTT DOCOMO, INC discussion motiv Rel-14 -
Motivation for RP-151792
conclusion: not treated

RP-151792 New WI proposal: Performance enhancements for high speed scenario in LTE NTT DOCOMO, Huawei, HiSilicon WID new RAN4 Rel-14 - new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_high_speed; follow-up WI of SI REL-13 FS_LTE_high_speed
conclusion: revised in RP-152263

RP-152263 New WI proposal: Performance enhancements for high speed scenario in LTE NTT DOCOMO, Huawei, HiSilicon WID new RAN4 Rel-14 -
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_high_speed; follow-up WI of SI REL-13 FS_LTE_high_speed;
discussion: Nokia Networks: we are also supporting this WI
conclusion: approved

Multi-Band Base Station testing with three or more bands:

RP-151679 Motivation for new Work Item proposal: Multi-Band Base Station testing with three or more bands Alcatel-Lucent discussion motiv Rel-14 -
In this contribution, we have provided a review of the proposals for the two main open issues that need to be solved for multi-band BS testing with three or more bands, and proposed a new Work Item to solve these issues.
conclusion: not treated

RP-151680 New Work Item proposal: Multi-Band Base Station testing with three or more bands Alcatel-Lucent WID new RAN4 Rel-14 -
new WI for UTRA & LTE; leading WG: RAN4; WI code to be used: MB_BS_test_3B
conclusion: revised in RP-152205

RP-152205 New Work Item proposal: Multi-Band Base Station testing with three or more bands Alcatel-Lucent WID new RAN4 Rel-14 -
revision of RP-151680; new WI for UTRA & LTE; leading WG: RAN4; WI code to be used: MB_BS_test_3B
conclusion: approved

Active Antenna System (AAS):

RP-151905 Motivation for new WI on Further Enhancement of Base Station (BS) RF and EMC requirements for Active Antenna System (AAS) Huawei discussion motiv Rel-14 -
Motivation for RP-151904
conclusion: not treated

RP-151904 Further Enhancement of Base Station (BS) RF and EMC requirements for Active Antenna System (AAS) Huawei WID new RAN4 Rel-14 -
new WI for UTRA & LTE; leading WG: RAN4; follow-up WI of not yet completed REL-13 WI AAS_BS_LTE_UTRA
conclusion: not treated

Enhanced Downlink Multiuser MIMO Transmission for LTE:

RP-152003 Motivation on New WI Proposal for Enhanced Downlink Multiuser MIMO Transmission for LTE Nokia Networks discussion motiv Rel-14 -
conclusion: withdrawn, see RP-152006 instead

RP-152006 Motivation on New WI Proposal for Enhanced Downlink Multiuser MIMO Transmission for LTE Nokia Networks discussion motiv Rel-14 -
conclusion: treated under AI 14.1.1

RP-152005 New work item proposal: Enhanced Downlink Multiuser MIMO Transmission for LTE Nokia Networks WID new RAN4 Rel-14-
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_DL_MUMIMO;
conclusion: treated under AI 14.1.1

14.2 Spectrum related WIs/SIs

basket CA WIs:

RP-151911 New WID: Basket WI for LTE Advanced Intra-band CA including contiguous and non-contiguous spectrum Ericsson WID new RAN4 s (intra) Rel-14-
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_intra
discussion: RAN chair: have baskets be seen in RAN4
Ericsson: discussion about 5B ongoing
conclusion: revised in RP-152250

RP-152250 New WID: Basket WI for LTE Advanced Intra-band CA including contiguous and non-contiguous spectrum Ericsson WID new RAN4 s (intra) Rel-14-
conclusion: approved

RP-151735 New WI: LTE Advanced inter-band CA Rel-14 for 2DL/1UL Qualcomm Incorporated WID new RAN4 s (2DL/1UL) Rel-14-
discussion: Intel: concern about B3/B39
Qualcomm: also B20/B28 is still open
RAN4 chair (Samsung): reminder that all new CA combinations have to be provided to RAN4 for review first
conclusion: revised in RP-152196

RP-152196 New WI: LTE Advanced inter-band CA Rel-14 for 2DL/1UL Qualcomm Incorporated WID new RAN4 s (2DL/1UL) Rel-14-
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_2DL1UL
discussion: RAN4 chair: B20/B28 was added?
Qualcomm: yes
conclusion: approved

RP-151906 New WID: LTE Advanced inter-band CA Rel-14 for 3DL/1UL Huawei, HiSilicon WID new RAN4 s (3DL/1UL) Rel-14-
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_3DL1UL
conclusion: revised in RP-152236

RP-152236 New WID: LTE Advanced inter-band CA Rel-14 for 3DL/1UL Huawei, HiSilicon WID new RAN4 s (3DL/1UL) Rel-14-
discussion: Intel: fine with having an evaluation phase for B3/B39 first
conclusion: revised in RP-152278

RP-152278 New WID: LTE Advanced inter-band CA Rel-14 for 3DL/1UL Huawei, HiSilicon WID new RAN4 s (3DL/1UL) Rel-14-
revision of RP-152236; new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_3DL1UL;
conclusion: approved

RP-151910 New WID: Basket WI for LTE Advanced Inter-band CA Rel-14 for 4DL/1UL Ericsson WID new RAN4 s (4DL/1UL) Rel-14-
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_4DL1UL
discussion: Intel: we should have at least one operator as supporting company per combination
Ericsson: discussion about 5B ongoing
conclusion: revised in RP-152249

RP-152249 New WID: Basket WI for LTE Advanced Inter-band CA Rel-14 for 4DL/1UL Ericsson WID new RAN4 s (4DL/1UL) Rel-14-
discussion: RAN4 chair (Saumsung): B3/B39 is removed?
Ericsson: yes
conclusion: approved

RP-151671 New WI: LTE Advanced inter-band CA Rel-14 for 5DL/1UL Nokia Networks WID new RAN4 s (5DL/1UL) Rel-14-
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_5DL1UL

conclusion: approved

RP-151907 New WID: LTE Advanced inter-band CA Rel-14 for 2DL/2UL Huawei, HiSilicon WID new RAN4 s (2UL) Rel-14 -
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_2DL2UL
conclusion: revised in RP-152237

RP-152237 New WID: LTE Advanced inter-band CA Rel-14 for 2DL/2UL Huawei, HiSilicon WID new RAN4 s (2UL) Rel-14 -
conclusion: approved

RP-151928 New WID:LTE Advanced inter-band CA Rel-14 for xDL/2UL with x=3,4,5 LG Electronics WID new RAN4 s (xDL/2UL) Rel-14 -
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_xDL2UL
conclusion: revised in RP-152246

RP-152246 New WID:LTE Advanced inter-band CA Rel-14 for xDL/2UL with x=3,4,5 LG Electronics WID new RAN4 s (xDL/2UL) Rel-14 -
conclusion: approved

RP-151920 New WI: LTE Advanced Inter-band CA Rel-14 for 3DL/3UL Nokia Networks WID new RAN4 s (3DL/3UL) Rel-14 -
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_3DL3UL
discussion: RAN4 chair (Nokia Networks): there is no combination proposed so far but intention is to work on generic aspects so far
conclusion: revised in RP-152241

RP-152241 New WI: LTE Advanced Inter-band CA Rel-14 for 3DL/3UL Nokia Networks WID new RAN4 s (3DL/3UL) Rel-14 -
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_CA_R14_3DL3UL;
conclusion: approved

RP-151736 New WI: LTE Advanced inter-band CA Rel-14 for 2DL/1UL Qualcomm Incorporated WID new RAN4 s (2DL/1UL) Rel-14 -
conclusion: withdrawn (duplication to RP-151735)

other CA WIs:

RP-152114 New WI: LTE Advanced inter-band Carrier Aggregation of Band 20 and Band 28 TeliaSonera WID new RAN4 s (2DL/1UL) Rel-14 -
new WI for LTE only; leading WG: RAN4; no WI code allocated as this CA combination should normally be included in the basket WI; RAN4 did not agree to add this combination into the CA basket WIs; note: This is a follow-up WI of REL-13 SI FS_LTE_CA_B20_B28; if inclusion of this CA is approved by RAN then WID has to be merged into RP-152196
discussion: TeliaSonera: Ericsson and Samsung are also supporting this now
Intel: only single filter vendor providing data, huge insertion loss, so not possible, filter only available in 2018, so premature to agree this now
TeliaSonera: we had 2 filter vendors, one anonymous in the report, oen terminal vendor co-signing
Intel: only single vendor visible, difficult to evaluate when it is avalaible on the market
Vodafone: supporting TeliaSonera
RAN4 chair (Samsung): suggest to discuss offline to see whether we can reach consensus
conclusion: revised in RP-152247

RP-152247 New WI: LTE Advanced inter-band Carrier Aggregation of Band 20 and Band 28 TeliaSonera WID new RAN4 s (2DL/1UL) Rel-14 -
conclusion: merged into RP-152196

RP-151833 New WI: LTE Advanced Carrier Aggregation up to (5DL/1UL) of Band 7 and Band 46 Telstra Corporation Limited WID new RAN4 s (5DL/1UL) Rel-14 -
conclusion: withdrawn (proposal is violating agreed basket WI approach for REL-14)

RP-151835 New WI: LTE Advanced Carrier Aggregation of (4DL/1UL) Band 7 and Band 46 Telstra Corporation Limited WID new RAN4 s (4DL/1UL) Rel-14 -
conclusion: withdrawn (proposal is violating agreed basket WI approach for REL-14)

RP-151836 New WI: LTE Advanced Carrier Aggregation of (3DL/1UL) Band 7 and Band 46 Telstra Corporation Limited WID new RAN4 s (3DL/1UL) Rel-14 -
conclusion: withdrawn (proposal is violating agreed basket WI approach for REL-14)

LTE FDD in the Bands 1980-2010 MHz and 2170-2200MHz for Region 3:

RP-151727 Background on the New WID: 2 GHz LTE band for Region 3 Dish Network discussion Rel-13 -
This contribution provides some background on the New WID:2 GHz LTE band for Region 3 in RP-151953
discussion: LG: is also supporting this document
MCC: normally it has to be avoided to open a WI, approve CRs and close a WI at the same RAN meeting but in this case such an exceptional approach makes sense
conclusion: noted

RP-151953 New WID: LTE FDD in the Bands 1980-2010 MHz and 2170-2200MHz for Region 3 KT Corp. WID new RAN4 s Rel-13 -
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_1980_2170_REG3; follow-up WI of SI FS_LTE_1980_2170_Korea and linked to WI LTE_1980_2170_REG1; note: It is proposed to open this WI in REL-13, approve CRs and close this WI at RAN #70;
conclusion: revised in RP-152238

RP-152238 New WID: LTE FDD in the Bands 1980-2010 MHz and 2170-2200MHz for Region 3 KT Corp. WID new RAN4 s Rel-13 -
revision of RP-151953; new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_1980_2170_REG3; follow-up WI of SI FS_LTE_1980_2170_Korea and linked to WI LTE_1980_2170_REG1; note: It is proposed to open this WI in REL-13, approve CRs and close this WI at RAN #70; only Core part and no Perf. part
conclusion: approved; with the approval of CRs in RP-152175 the Core part WI is already completed at RAN #70.

RP-152175 Endorsed CRs for the Introduction of Region 3 requirement in Band 65 RAN4 CR Pack Rel-13 LTE_1980_2170_REG3-Core
discussion: MCC: late submission; RAN4 endorsed CRs to introduce requiremensts of Region 3 in Band 65; CRs to be approved after approving the WID for B65 in region 3 in RP-151953; moved from AI 11.9.1 to AI 14.2
conclusion: approved
With the approval of these CRs the new WI LTE_1980_2170_REG3-Core is completed

LTE FDD 2.6 GHz Supplemental DL band (2570-2620 MHz) and LTE CA (2DL/1UL) with Band 3:

RP-152043 Motivation for new WI LTE FDD 2.6 GHz Supplemental DL band (2570-2620 MHz) and LTE Carrier Aggregation (2DL/1UL) with Band 3 ORANGE discussion motiv Rel-14 -
motivation for RP-152004
discussion: Sprint: what are the co-existence requirements for TDD and FDD between band 38 and band 7
Orange: co-existence studies were done by CEPT
Sprint: WID should be restricted to region 1
Orange: is done already in the WID RP-152215
Huawei: in which country is it possible to use it?
Orange: e.g. in Spain
conclusion: noted

RP-152004 New WI: LTE FDD 2.6 GHz Supplemental DL band (2570-2620 MHz) and LTE Carrier Aggregation (2DL/1UL) with Band 3 ORANGE WID new RAN4 s (2DL/1UL) Rel-14 -
conclusion: revised in RP-152215

RP-152215 New WI: LTE FDD 2.6 GHz Supplemental DL band (2570-2620 MHz) and LTE Carrier Aggregation (2DL/1UL) with Band 3 for region 1 ORANGE WID new RAN4 s (2DL/1UL) Rel-14 -
revision of RP-152004; new WI for LTE only; leading WG: RAN4; Introduction of a new LTE band FDD 2.6 GHz SDL band (2570-2620 MHz) and its LTE inter-band carrier aggregation with band 3; WI code to be used: LTE_FDD_2600_CA_B3
discussion: RAN3 chair: target date wrong
conclusion: revised in RP-152253

RP-152253 New WI: LTE FDD 2.6 GHz Supplemental DL band (2570-2620 MHz) and LTE Carrier Aggregation (2DL/1UL) with Band 3 ORANGE WID new RAN4 s (2DL/1UL) Rel-14 -

revision of RP-152215; new WI for LTE only; leading WG: RAN4; Introduction of a new LTE band FDD 2.6 GHz SDL band (2570-2620 MHz) and its LTE inter-band carrier aggregation with band 3; WI code to be used: LTE_FDD_2600_CA_B3;
conclusion: approved
note: WI is kept separate from CA basket WIs as it introduces also a new band; however:
1. CA aspects will affect the 2DL/1UL CA basket WI TR
2. if afterwards CA of this new band is considered with another band, then corresponding new CA combinations will be included in the basket CA WIs

AWS-3/4 Band for LTE:

RP-151731 New AWS-3/4 Band for LTE Dish Network WID new RAN4 s Rel-14 -
new WI for LTE only; leading WG: RAN4; WI code to be used: LTE_AWS_3_4; follow-up WI of REL-13 SI FS_LTE_AWS_3_4
conclusion: approved

14.3 UE conformance testing WIs/SIs led by RAN5

RP-151763 New Work Item proposal: UE Conformance Test Aspects - Increasing the minimum number of carriers for UE monitoring in UTRA and E-UTRA Ericsson WID new RAN5 Rel-12 -
new test WI for UTRA and LTE; leading WG: RAN5; tested: Rel-12 LTE_UTRA_IncMon-Core; WI code to be used: LTE_UTRA_IncMon-UEConTest
conclusion: approved

RP-151764 New Work Item proposal: UE Conformance Test Aspects - Rel-13 LTE CA configurations Ericsson WID new RAN5 Rel-13 -
new test WI for LTE only; leading WG: RAN5; tested: Rel-13 CA combinations; WI code to be used: LTE_CA_Rel13-UEConTest
conclusion: approved

RP-151765 New Work Item proposal: UE Conformance Test Aspects - LTE DL 4 Rx antenna ports Ericsson WID new RAN5 Rel-13 -
new test WI for LTE only; leading WG: RAN5; tested: Rel-13 LTE_4Rx_AP_DL-Core; WI code to be used: LTE_4Rx_AP_DL-UEConTest
conclusion: approved

RP-151766 New Work Item proposal: UE Conformance Test Aspects - Licensed-Assisted Access using LTE Ericsson WID new RAN5 Rel-13 -
new test WI for LTE only; leading WG: RAN5; tested: Rel-13 LTE_LAA-Core; WI code to be used: LTE_LAA-UEConTest
conclusion: approved

RP-151767 New Work Item proposal: UE Conformance Test Aspects - AWS-Extension Band for LTE (Band 66) Ericsson WID new RAN5 Rel-13 -
new test WI for LTE only; leading WG: RAN5; tested: REL-13 LTE_AWS_EXT-Core; WI code to be used: LTE_AWS_EXT-UEConTest
conclusion: approved

15 Next generation radio access technology

15.1 Communication with other organizations

Documents of this AI will be treated together with documents of AI 15.3.

RP-151668 LS on 5G use cases from verticals
(EC_LS_151201; to: RAN; cc: -; contact: EC) European Commission (EC) DG CONNECT - Unit El, Network Technologies LS in Rel-14 -
RAN action requested
discussion: RAN chair: at this stage we are not prioritizing any use case at the moment so the discussion is still open and will be handled in the RAN SI to be started this week
Orange: This input it coming at the right moment and it is important that research project can bring their results to 3GPP
Nokia Networks: supports this presentation
ALU: also supports this, do we need to add support of verticals also in the RAN SI?
Orange: these are actually families of uses cases and we have just described the corners of the triangle with our 3 use cases considered in 3GPP
RAN chair: suggests to keep the SI text simple so that we can easily document this in the SI TR
conclusion: noted, no LS answer

RP-152129 LS on NGMN Requirement metrics and deployment scenarios for 5G
(NGMN_LS_151204; to: RAN; cc: - ; contact: Telefonica) NGMN LS in Rel-14 -
no explicit RAN action requested
conclusion: noted, no LS answer

RP-152197 LS on NGMN view of 5G as an end-to-end ecosystem - Alignment of 3GPP SA and RAN
(NGMN_LS_20151204b; to: SA, RAN; cc: -; contact: Telefonica) NGMN LS in Rel-14 -
RAN action requested
conclusion: noted, no LS answer

15.2 Study on channel model for frequency spectrum above 6 GHz [new SI: FS_6GHz_CH_model]

RP-151854 Status report for SI Study on channel model for frequency spectrum above 6 GHz; rapporteur: Samsung
RAN1 WI status report Rel-14 FS_6GHz_CH_model
discussion: MCC: late submission; target date in [ ] ? [ ] will be ignored for the work plan
RAN1 chair: plans to ask former RAN4 chair (Nokia Networks) to chair the channel modelling session in RAN1
conclusion: noted, approved: 10%, June 16

RP-151847 Report of RAN email discussion about >6GHz channel modeling Samsung report Rel-14
FS_6GHz_CH_model
conclusion: revised in RP-152212

RP-152212 Report of RAN email discussion about >6GHz channel modeling Samsung report Rel-14
FS_6GHz_CH_model
discussion: RAN chair: discussion will now move to RAN1 after RAN #70
Orange: in the email discussion there was a question on the frequency bands that companies want to cover, is this included here?
Samsung: up to 100GHz
Vodafone: also link level simulations intended (e.g. throughput vs. pathloss)?
xy?: Geneva decided up to 20GHz
Samsung: we are not limted by the WRC-15 decision as anyway local regulations must be respected, so we can go beyond 20GHz
conclusion: noted

RP-151956 5G Channel Model for 6 GHz–100 GHz NTT DOCOMO discussion Rel-14 FS_6GHz_CH_model

Proposal: Companies are encouraged to check and consider a white paper [3] for the SI on channel model for frequency spectrum above 6 GHz.

[3] Aalto University, BUPT, CMCC, Ericsson, Huawei, Intel, KT Corporation, Nokia, NTT DOCOMO, New York University, Qualcomm, Samsung, University of Bristol, University of Southern California, "5G Channel Model for bands up to 100 GHz", Globecom 2015, Dec. 2015 (http://www.5gworkshops.com).

discussion: ZTE: table 1 lists a lot of features, in email discussion we agreed to have 5 features; whitepaper addresses only 1.5 of them, what about the others that we agreed in the email discussion?
NTT DOCOMO: paper is only for information, we are open to further discuss other features

conclusion: noted

RP-151861 Measurement results for 28GHz in multiple deployment scenarios KT Corp. discussion Rel-14 FS_6GHz_CH_model

This contribution provides measurement results for 28GHz in multiple deployment scenarios.

conclusion: noted

RP-151724 Considerations on high-frequency channel modeling ZTE Corporation discussion Rel-14 FS_6GHz_CH_model

Observation 1: With the deployment scenarios for 5G communication decided in RAN plenary, it should be left to RAN1 to consider whether the channel modeling for various deployments in each classification group (indoor, UMi (O2O), etc) should be treated separately or consolidated.

Observation 2: The high-frequency channel modeling should at least contain following key features
The foliage, atmosphere and rain attenuations;
The blockage caused by the static/moving objects;
The spatial consistency.

Observation 3: The hybrid modeling methodology can balance between modeling accuracy and complexity, and therefore should be considered by RAN1 as one of modeling candidates.

discussion: RAN chair: we will not take decisions here, methodology will be discussed in RAN1

conclusion: noted

RP-151967 Views on channel modeling study for 5G Huawei, HiSilicon discussion Rel-14 FS_6GHz_CH_model

suggestions for further studies:

- *The potential use of spectrum in the frequency range of 6 GHz to 100 GHz for IMT that is allocated for mobile services should be suitably covered by the channel modelling studies.*
- *The frequency bands between 24.25 GHz and 86 GHz given in ITU-R Resolution COM6/20 (WRC-15) could have high priority for channel measurements and channel modelling development due to their potential allocation for IMT use beyond 2019.*
- *It would be preferable to have one unified channel model framework, perhaps including frequency dependent parameters for specific frequency bands (or band ranges), to efficiently address channel modelling needs for the wide range of frequency bands.*
- *Channel modelling for "5G" needs to support up to several giga hertz bandwidth. This should be modelled not only in the context of individual channels but also in the context of channel aggregations and multi-operator bands encompassing multiple giga-Hertz.*

conclusion: noted, will be discussed in RAN1 as well

15.3 New SI proposals

Requirements Study:

RP-151760 New Study Item Proposal: Study on Scenarios and Requirements for Next Generation Access Technologies China Mobile Com. Corporation SID new RAN Rel-14 -

moved from AI 14.1.1 to AI 15.3;

conclusion: revised in RP-152182

RP-152182 New Study Item Proposal: Study on Scenarios and Requirements for Next Generation Access Technologies China Mobile Com. Corporation SID new RAN Rel-14 -

new SI for new RAT; leader: RAN; WI code to be used: FS_NG_SReq

discussion: RAN chair: architecture & interworking aspects could be covered in this RAN SI as well

Deutsche Telekom: This was also our understanding
CMCC: expects another technology and a performance SID
AT&T: is also supporting this SI
Orange: requirements and deployments scenarios have to be mapped with SA use cases
RAN chair: yes, is clear from justifications (we also align with ITU-R)
Orange: is talking about alignment with SA
AT&T: considers this already included
SA chair: alignment with SA will be taken into account, we have another paper on this
ALU: Alcatel Shanghai Bell is also supporting
RAN chair: additional supporting companies please contact the SI rapporteur to be added
IAESI: use cases of RAN should be handled in RAN was decided by SA1 so they should be covered as well
RAN chair: you can bring your inputs, no problems
Telecom Italia: will we have an email discussion?
RAN chair: yes, I have another input also about coordination for this (also suggesting an ad hoc) that we will treat later

conclusion: revised in RP-152226, sentence about RAN-SA coordination to be added, also supporting companies to be added

RP-152226 New Study Item Proposal: Study on Scenarios and Requirements for Next Generation Access Technologies China Mobile Com. Corporation SID new RAN Rel-14 -

revision of RP-152182; new SI for new RAT; leader: RAN; WI code to be used: FS_NG_SReq;

discussion: Orange: architectural thing should be clearer in objectives
RAN chair: architectural and interworking are part of the SI and we could it add it if we want
Orange: next generation technologies includes LTE evolution
RAN chair: yes
ALU: 2nd bullet remove "usage" and add Alcatel-Lucent Shanghai Bell
Vodafone: sentence does not make much sentence anymore, remove "for each usage scenario"
RAN chair: ok, that's better

conclusion: revised in RP-152257

RP-152257 New Study Item Proposal: Study on Scenarios and Requirements for Next Generation Access Technologies China Mobile Com. Corporation SID new RAN Rel-14 -

new SI for new RAT; leader: RAN; WI code to be used: FS_NG_SReq;

conclusion: approved
NOTE: TR 38.913 was allocated for the SI TR.
email discussion on RAN reflector (starting next week until the meeting in January) :
- to have a stable TR skeleton and
- after this is done we will try to fill the TR
rapporteur of the email discussion: CMCC

RP-151761 Skeleton TR of the Study on Scenarios and Requirements for Next Generation Access Technologies China Mobile Com. Corporation draft TR 38.913 RAN Rel-14 -

TR proposal related to a new RAN SI; moved from AI 14.1.1 to AI 15.3;

conclusion: revised in RP-152183

RP-152183 Skeleton TR of the Study on Scenarios and Requirements for Next Generation Access Technologies China Mobile Com. Corporation draft TR 38.913 RAN Rel-14 -

revision of RP-151761; TR proposal related to a new RAN SI;

discussion: Vodafone: we had some comments on the RAN reflector, TR goes directly to deployment scenarios and performance metrics and there should be some higher level of requirements beforehand
Orange:understands Vodafone point and there are quantitative and qualitative requirements and we have to be open to cover both
KT: requirements for each deployment scenario is preferred
Sprint: TR is about a new air interface and interworking of different technologies is not covered at all
Panasonic: average spectrum efficiency is mentioned but median value (50% throughput) is missing

conclusion: postponed, will be looked at during the email discussion on the RAN reflector

RP-151863 Motivation for Study on Scenarios and Requirements for Next Generation Radio Access Technologies KT Corp. discussion motiv Rel-14 -

This contribution provides motivation for new SI on 5G Scenarios and Requirements.
discussion: KT: is already covered in SID
conclusion: noted

RP-151823 Requirement for long distance coverage in next generation radio access technologies Telstra Corporation Limited discussion Rel-14-
Proposal to include requirements for long distance coverage in study item on scenarios and requirements for next generation access technologies; moved from AI 14.1 to AI 15.3
conclusion: revised in RP-152118

RP-152118 Requirement for long distance coverage in next generation radio access technologies Telstra Corporation Limited discussion Rel-14-
discussion: Telefonica: is also interested in this, esp. for the Southern hemisphere
RAN chair: suggests to bring this into the RAN discussion when we start the SI
conclusion: noted

Treatement of LSs of AI 15.1: RP-152129 and RP-151668

Technology Study:

RP-151922 New SID Proposal: Study on Next Generation New Radio Access Technology NTT DOCOMO, CMCC, Ericsson, Huawei, Intel, Nokia Networks, Qualcomm, Samsung SID new RAN1 Rel-14-
new SI for new RAT; leading WG: RAN1; WI code to be used: FS_NG_newRAT;
discussion: MCC: rapporteur missing
RAN chair: is just for information at this meeting
Telecom Italia: radio architecture should include the current radio interface as well
KT: section 4 support of frequency band should indicate up to 30GHz, we are also volunteering for being RAN4 rapporteur for this
LG: support of TDD and FDD should also include new duplex scheme, sidelink is missing, concerned about no TU allocation for this; number of rapporteurs is increasing (8 rapporteurs?)
RAN chair: agrees that there must be some budgeting but we need to have this independent from the LTE budget, we can discuss this later
NTT DOCOMO: open to discuss the rapporteurships
Sprint: section 4 includes already requirements to be addressed in the RAN SI
TeliaSonera: bullet 4 is too detailled
ZTE: real finalization of this SID can only happen after RAN SI is completed
Orange: details of 4 indicate the eMBB use case is targeted but this was not agreed so far
RAN4 chair (Samsung): only RF part so far included
conclusion: offline discussion on Wed afternoon
finally postponed

RP-152040 5G Study and Work item organization Interdigital Communications discussion Rel-14-
discussion: AT&T:3rd proposal in line with SA1?
Interdigital: is for discussion
conclusion: noted

RP-151762 Prioritization of higher-layer 5G technology studies IAESI, FAIRSPECTRUM discussion Rel-14-
conclusion: noted

Architecture considerations:

RP-151994 Study on 5G RAN Architecture TELECOM ITALIA S.p.A. discussion Rel-14-
conclusion: revised in RP-152211

RP-152211 Study on 5G RAN Architecture TELECOM ITALIA S.p.A. discussion Rel-14-
discussion: NEC: LTE evolution to be included as well?
Telecom Italia: yes, we would like to have a single study for this
KT: this would then impact LTE specs?
Telecom Italia: yes
IAESI: COHERENT project shows that virtualizing lower layers will have benefits
conclusion: noted

RP-151864 Motivation for Cloud RAN Architecture KT Corp. discussion motiv Rel-14-

This contribution suggests to include study on Cloud RAN Architecture in the proposed SI on new Radio Access Technology and new radio access technical study.
conclusion: noted

15.4 Other inputs

RP-151660 Further Planning on Next Generation Radio Access Technology RAN chairman (Qualcomm)
discussion Rel-14-

- *RAN to confirm SA tentative planning, with following tentative release (stage-3) freeze dates:*
  Rel-14 stage-3 freeze in March 2017
  Rel-15 stage-3 freeze in June 2018
  Rel-16 stage-3 freeze in Dec 2019 => basis for the submission to ITU-R
- *RAN AH on requirements to be scheduled in mid Q1-16*
  To make sure that by RAN#71 we have an initial set of requirements for the technology work to start in the WGs without delay
- *ITU-R AH to prepare for RAN#71 a living document with a plan for the whole interaction with ITU-R on IMT 2020*
- *WG Chairs should start planning to accommodate after March a track for the work on the new radio, in addition to the existing WG capacity that will continue to be dedicated to the LTE evolution (and HSPA enhancements)*

discussion: Dish: There is a Future Radio workshop at ETSI on 27/28.01.2015 which would clash
Telecom Italia: parallel WG sessions after March?
RAN chair: yes, except RAN1 for 6GHz channel modelling
Telecom Italia: may be a problem with NB-IOT if NB-IOT is not completed in March
Telecom Italia: can we agree that LTE evolution will be part of the IMT-2020 submission?
RAN chair: is to be decided for RAN
Telecom Italia: REL schedule: SA1 is planning to freeze stage 1 in March which would not be useful
RAN chair: we will discuss SA-RAN coordination later
Mediatek: slide 10: WG chairs should plan to accomodate... does it mean a parallel track or working on week-ends?
RAN chair: working on week-ends is not intended, this was a real exception;
Mediatek: we would like to avoid another additional track
RAN chair: NB-IOT and 5G together should only be one track, ideally NB-IOT is going down and 5G work is starting
Oppo: supports to not have another track
Orange: some WGs are already in a critical situation regarding number of parallel sessions
RAN chair: we will approve less WIs for LTE tracks and we will request to be more honest in terms of time budget
Orange: normal today is already 2 parallel LTE sessions plus additional offline sessions and this has to reduce
RAN chair: agrees
RAN2 chair: thinks that it is not needed to go directly for parallel tracks
RAN chair: is ok, WG chairs will manage their WGs on their own
RAN1 chair: some contradictions already visible (not appreciated parallel sessions/huge WIs): please reduce scope of your WIs
Sprint: worried about interworking with SA, how to include SA1 output
RAN chair: for March I would like to have a plan from WG chairs how they plan to address the new SI for WGs in the next quarters, this will be presented to RAN #71
LG: would like to remove that LTE evolution interest will reduce
Ericsson: it has to be understood that if RAN agrees addtional work, then companies have to also increase their participation in WGs; we did this for NB-IOT and this needs to be understood
RAN1 chair: agrees and complaining companies are also raising bigger WIs and this should change as well
IAESI: RAN3 has capacity
RAN3 chair: confirmed, plans to have one session only
RAN chair: please bring your WG assessments to RAN #71
Orange: since we have 2 tracks for LTE in RAN1, you cannot say equal capacity for LTE and for 5G, as this would require 2 parallel tracks for 5G

RAN chair: this is not intended, RAN WGs will continue their LTE work (with less WIs and more reasonable time budgets) but we will need to address the 5G SI without limiting LTE work and vice versa
RAN1 chair: is planning channel modelling ad hoc in March 16
AT&T: better have a 3-4 day than ajust 2 day ad hoc if there is a need for an ad hoc
Vodafone: keeping RAN SI open after June 16 is to add new requirements later or just to refine existing ones
RAN chair: was intended for ITU-R but we could also keep it open e.g. for additional requirements from verticals (but this should be smaller changes, biggest part should be included by June)
Vodafone: would like to keep it open for new requirements after June
Orange: we agreed the status report of the 6GHz channel modelling to be completed by June 16 but 1h later we indicate that we need another ad hoc to complete this SI by June, this is not proper planning from RAN side
RAN1 chair: Based on some discussions in this week regarding handling of LTE and next generation items, it was not clear how to take care of the time units for the channel model SI and this is the reason why I indicated the plan for an ad hoc now
AT&T: we need to know the number of parallel tracks also for meeting hosts so this has to be included in the planning
Qualcomm: RAN ad hoc on RAN SI has the mandate to work on the TR
RAN chair: RAN 5G req. SI ad hoc will have decision power about this SI i.e. including the TR, we plan to send a stable TR to ITU-R in June 16
Telecom Italia: suggests to have the ad hoc in the second part of the week after the NGMN meeting
RAN chair: this is option 1, 2nd option is somewhere in Europe in same week, 3rd option will be in Asia the week afterwards

conclusion: revised in RP-152228
Two changes reflecting the outcome of the discussion:
- Removed the sentence “But it is already anticipated that the LTE evolution will gradually wind down in future releases (like was the case for HSPA)” from one of the subbulets from slide 10
- Added “…a track for the work on the new radio and architecture” in action of slide 10 and 11

RP-152228 Further Planning on Next Generation Radio Access Technology RAN chairman (Qualcomm) discussion Rel-14-

proposals from last slide:
- *RAN to confirm SA tentative planning, with following tentative release (stage-3) freeze dates:*
  Rel-14 stage-3 freeze in March 2017
  Rel-15 stage-3 freeze in June 2018
  Rel-16 stage-3 freeze in Dec 2019 => basis for the submission to ITU-R
- *RAN AH on requirements to be scheduled in mid Q1-16:*
  To make sure that by RAN#71 we have an initial set of requirements for the technology work to start in the WGs without delay
- *ITU-R AH to prepare for RAN#71 a living document with a plan for the whole interaction with ITU-R on IMT 2020*
- *WG Chairs should start planning to accommodate after March a track for the work on the new radio and architecture, in addition to the existing WG capacity that will continue to be dedicated to the LTE evolution (and HSPA enhancements)*

conclusion: noted, proposals of last slide are endorsed
RAN WG chairs are requested to provide their timeplan for addressing the RAN WG SI to RAN #71 (including how many parallel tracks are considered in general);
REL dates are confirmed by RAN
See also ACTION_ITEM_1 and ACTION_ITEM_2 in Annex H.

Treatement of LS of AI 15.1: RP-152197

RP-152115 RAN-SA Work Coordination on the "Next Generation Architecture" RAN Chairman (Qualcomm), SA Chairman (Samsung) discussion Rel-14-

Proposals
1. *SA and RAN WGs will jointly identify feasible objectives and approaches to achieve them.*
2. *SA and RAN will jointly identify a set of supported scenarios, goals and responsibilities for the Next Generation Architecture by December 2016 at the latest.*

3. *Decide: (a) WGs meet (AUG [NOV?]) and advise RAN & SA who jointly decide (SEP [DEC?]). Or (b) a workshop near TSG#73 [TSG#74?] is added to the calendar.*

discussion: ZTE: 2nd proposal should be discussed in the requirements phase or are we implying we know the architecture already?
Vodafone: these seem to be some Pre-WI agreements?
RAN chair: at this time RAN WGs will still be deeply in the study phase
RAN2 chair: we need 2 quarters in RAN2 to discuss in RAN2 to have an own view and then we can discuss with SA
SA chair: stage 2 REL-14 freeze is Sep.16 so in order to have something proper in REL-15 from SA2 this will fit with their schedule
RAN3 chair: technical discussions need to take place in WGs and we then need to report to RAN/SA either for results or for decisions
RAN2 chair: SI in REL-14 in SA2 or a WI?
SA chair: SA2 has a SI in REL-14 and we need to know how to transfer this into a WI for REL-15 in coordination with RAN

conclusion: noted,
It is agreed that RAN and SA must coordinate at both the working group and TSG level in the second half of 2016. While different timing and form of such coordination has been discussed, it has not yet been agreed.
A plan will be presented to RAN and SA and leadership seeks endorsement for this plan at TSG #71.
Note: Regarding TSG level coordination: In contrast to former plans, no extra RAN-SA workshop is intended anymore, the coordination of next generation architecture activities could fit into a Wed afternoon joint SA-RAN session during a TSG meeting.

16 UE capabilities/FGIs

DL 256QAM in LTE for UE Categories 6-10:

RP-151789 Support of 256QAM for UE categories 6/7/9/10 Intel Corporation, AT&T, Bouygues Telecom, China Unicom, CMCC, DISH Network, Rogers, Sprint, Swisscom, Telstra, Verizon Wireless discussion Rel-12 TEI12, LTE_SC_enh_L1-Core
conclusion: revised in RP-152243

RP-152243 Support of 256QAM for UE categories 6/7/9/10 Intel Corporation, AT&T, Bouygues Telecom, China Unicom, CMCC, DISH Network, Rogers, Sprint, Swisscom, Telstra, Verizon Wireless discussion Rel-12 LTE_SC_enh_L1-Core
conclusion: noted

RP-151799 Discussion of 256QAM for UE Categories 6-10 Qualcomm Incorporated discussion Rel-10 LTE-Phys, TEI10
in reply to RP-151789
conclusion: noted

RP-151860 UE category in fragmented spectrum or with lower baseband processing power Samsung discussion Rel-13 -
in reply to RP-151789
conclusion: revised in RP-152185

RP-152185 UE category in fragmented spectrum or with lower baseband processing power Samsung discussion Rel-13 -
conclusion: noted

discussion of RP-152243, RP-151799 and RP-152185:
Sprint: supporting Intel, would like to get the 256QAM
Qualcomm: is reusing same peak data rate
CeWIT: supports Intel's input, would like to have 256QAM with lower categories
Qualcomm: is already supported with lower categories
Intel: does not agree with Qualcomm because soft buffer is not increased from cat.6 to cat.13; cat.11 and cat.12 will also be introduced starting from REL-11, we increase max TBS
Huawei: Intel went back to WGs and proposal was not agreed by RAN1/RAN2 as we have it already, if we would adopt the Intel proposal the concept of one peak rate => one category which we have since REL-8 would be violated, so we support Qualcomm

Vodafone: supports Intel's proposal; high peak rate but lower buffer size is a problem; we need to clarify this in specs properly
Deutsche Telekom: supports Vodafone, remove all categories and introduce a new limited number of UE cat.; it makes no sense to have categories with 50Mbps difference, this is just for marketing and a wrong approach, these are anyway just maximum numbers
Qualcomm: it has a very large impact on UE architecture and we can not change this on the fly, we took decisions in the past and we should stick to the principles we
RAN chair: suggests that interested companies discuss this offline and come back with a way forward

RP-152283 Way Forward on 256QAM Support for UE Categories 6, 7, 9 and 10 Intel Corporation, Apple, AT&T, Bell Mobility, Bouygues Telecom, China Telecom, China Unicom, CMCC, Ericsson, Reliance – Jio, Rogers, Sprint, Swisscom, Telstra, T-Mobile USA, US Cellular, Verizon Wireless discussion Rel-12 LTE_SC_enh_L1-Core
discussion: Qualcomm: has still the same concerns
Intel: Mediatek, Samsung would no longer object; same way forward with additional supporting companies (as Qualcomm had no alternative proposal)
Huawei: only one chip set supporting this, concern from Vodafone and DT regarding consistency was not addressed
Intel: LG chipset vendor also supporting
LG: we are not representing chipset business here but UE vendor, so if there is a chipset we could support it
DT: we still believe what we did with categories is wrong but it seems there is no interest in the group to change this
Qualcomm: DT proposal would need more time to change it and we can discuss this further but Intel's proposal is not acceptable for us
ALU: we could consider DT idea to have a new approach for new categories
Sprint: we are supporting Intel's proposal and we have not understood resistance to increase the number of UE categories
Nokia Networks: from network point of view the CR is nice because UE will take care of this, we can still discuss UE categories for REL-13 or later but we would not like to see a proposal where REL-12 UE categories will suddenly be changed on Thu afternoon
AT&T: Intel's proposal is optional i.e. chipset vendors do not need to implement it

Intel: no consensus achieved in offline discussion
Qualcomm: we offered to have this for 6 and 7 but not for 9 and 10 but this was rejected by Intel: cat.6/7/9/10 or just cat.9/10 would be logic but not cat.6/7
Samsung: we could live with Intel's proposal following the operators' support but we could also consider ALU proposal
Huawei: REL-13 would be the easiest approach (we actually would create 6+/7+/9+/10+)
RAN chair: one quarter email discussion on RAN reflector with Intel's proposal as starting point (incl. also the option of having new category scheme) and decide in March 16
Intel: we extended this already by 3 months, only 2 companies are objecting
Qualcomm: it was discussed over a year and it was decided not to do it and there was also no clarification why this needs to be done; also a change has big impact on companies who have implemented this already
Oppo: also requires more time to analyse the impacts of this proposal
conclusion: revised in RP-152291; email discussion on RAN reflector until March 16 in order to take a decision then

RP-152291 Way Forward on 256QAM Support for UE Categories 6, 7, 9 and 10 Intel Corporation, Apple, AT&T, Bell Mobility, Bouygues Telecom, China Telecom, China Unicom, CMCC, Ericsson, Reliance – Jio, Rogers, Sprint, Swisscom, Telstra, T-Mobile USA, US Cellular, Verizon Wireless discussion Rel-12 LTE_SC_enh_L1-Core
conclusion: withdrawn (as not provided)

17 Inter WG/TSG-related discussions & decisions

GERAN:

RP-151788 TSG GERAN#68 status report TSG GERAN Chairman report
Presentation of TSG GERAN status report to prepare for merge of TSG RAN and GERAN.
conclusion: noted

RP-151787 TSG GERAN#68 status report TSG GERAN Chairman report
conclusion: withdrawn (double allocation)

18 Outputs to other groups

No contributions.

19 Terms of Reference (ToR)

RAN:

RP-151781 DRAFT RAN Terms of Reference TSG GERAN Chairman (Ericsson) ToR
Draft RAN ToR adding TSG GERAN responsibilities to the TSG RAN ToR. Presented only for information and discussion at RAN#70.
discussion: Dish: do we need to mention FDD and TDD explicitly as we may want to add further duplex modes?
RAN chair: was simple an alignment
Deutsche Telekom: NB-IOT is and E-UTRA technology?
RAN chair: long-term NB-IOT will fall in the LTE evolution time budget bucket
Deutsche Telekom: do we want to add the 5G already?
RAN chair: we update this when we have a proper term for it
RAN3 chair: "and beyond" covers 5G at the moment
Telecom Italia: NB-IOT may be completed in March, will there will still be a dedicated NB-IOT session after March or will this be covered in the LTE sessions
RAN chair: let's see this in March
Panasonic: sidelink aspect is covered?
RAN chair: good point, should the D2D link be covered as well?
conclusion: postponed until RAN #71 in March 16, further refinement can happen until then

RAN5:

RP-151783 DRAFT RAN5 Terms of Reference TSG GERAN (Ericsson), GERAN3new (Sierra Wireless) & RAN5 Chairmen (Motorola Mobility) ToR
Draft RAN5 ToR taking GERAN3new responsibilities into consideration.
discussion: Rohde & Schwarz: GERAN does not use TTCN
conclusion: postponed until RAN #71 in March 16, further refinement can happen until then

RAN6:

RP-151784 Draft RAN6 Terms of Reference TSG GERAN Chairman (Ericsson) ToR
Draft new RAN6 ToR taking GERAN1 and GERAN2 responsibilities into consideration.
discussion: Spec Manager: to call RAN6 GERAN is a bit strange (close and open the same group) and it will also limit it for the future
AT&T: call it "GSM/EDGE radio access technologies"
conclusion: postponed, until RAN #71 in March 16, further refinement can happen until then

email discussion on the RAN reflector until RAN #71 about the 3 ToRs (rapporteur: GERAN chairman (Ericsson))

20 Project management

Work plan:

RP-151644 3GPP Work Plan review at Plenary #70 ETSI MCC Work Plan
conclusion: noted

Others:

RP-151645 3GPP Support Team Report ETSI MCC report
conclusion: noted
NOTE: From January 2016 onwards, hosts will not be obliged to print badges for 3GPP meetings.

Instead, delegates will be expected to print their own badges using the hyperlink in the registration confirmation email.

RP-152121 TDoc types and status values ETSI MCC draft CR 21.900 F Rel-13 TEI13
specification is under SA control
conclusion: endorsed

RP-152178 Proposal to add energy consumption and efficiency into the WID template Orange discussion
discussion: RAN chair: sees no issue with the proposal, can be discussed in SA
OPPO: how will this apply?
RAN chair: if applicable, you fill it out
Huawei: may have more impact if it is included in objectives section
RAN3 chair: which group is taking care of this if something is filled out?
Sprint: it is not clear when to fill it out
KT: ITU-R is also very much interested in this and should be included also in 5G SI
RAN chair: no problem to add this from my side
conclusion: noted

21 Future meeting schedule

Meeting schedule 2010/2011/2012/2013/2014/2015/2016/2017:

MEETING	DATES	LOCATION	HOST
RAN #47	16 March – 19 March 2010	Vienna, Austria	EF3
RAN #48	1 June – 4 June 2010	Seoul, Korea	TTA
RAN #49	14 Sep. – 17 Sep. 2010	San Antonio, USA	NAF3
RAN #50	7 Dec. – 10 Dec. 2010	Istanbul, Turkey	EF3
RAN #51	15 March – 18 March 2011	Kansas City, USA	Sprint Nextel
RAN #52	31 May – 3 June 2011	Bratislava, Slovakia	EF3
RAN #53	13 Sep. – 16 Sep. 2011	Fukuoka, Japan	ARIB & TTC
RAN #54	6 Dec. – 9 Dec. 2011	Berlin, Germany	EF3
RAN #55	28 Feb. – 2 March 2012	Xiamen, China	ZTE, CMCC
REL-12 workshop ***	11 June - 12 June 2012	Ljubljana, Slovenia	EF3
RAN #56	13 June – 15 June 2012	Ljubljana, Slovenia	EF3
RAN #57	4 Sep. – 7 Sep. 2012	Chicago, USA	NAF3
RAN #58	4 Dec. – 7 Dec. 2012	Barcelona, Spain	EF3
RAN #59	26 Feb. – 1 March 2013	Vienna, Austria	EF3
RAN #60	11 June – 14 June 2013	Oranjestad, Aruba	NAF3
RAN #61	3 Sep. – 6 Sep. 2013	Porto, Portugal	EF3
RAN #62	3 Dec. – 6 Dec. 2013	Busan, Korea	TTA
RAN #63 **	3 March – 6 March 2014	Fukuoka, Japan	ARIB & TTC
RAN #64	10 June – 13 June 2014	Sophia Antipolis, France	ETSI
RAN workshop LTE-U	13 June 2014	Sophia Antipolis, France	ETSI
RAN #65	9 Sep. – 12 Sep. 2014	Edinburgh, Scotland	EF3
RAN #66 **	8 Dec. – 11 Dec. 2014	Maui, USA	NAF3
RAN #67 **	9 March – 12 March 2015	Shanghai, China	Huawei
RAN #68 **	15 June – 18 June 2015	Malmö, Sweden	EF3
workshop LAA	29 Aug. 2015	Beijing, China	Huawei
RAN #69 **	14 Sep. – 16 Sep. 2015	Phoenix, USA	NAF3
workshop 5G	17 Sep. – 18 Sep. 2015	Phoenix, USA	NAF3
**RAN #70 ** **	**7 Dec. – 10 Dec. 2015**	**Sitges, Spain**	**EF3**
Requirements ad hoc	28 Jan. - 29 Jan. 2016	Barcelona, Spain	EF3
RAN #71 **	7 March – 10 March 2016	Göteborg, Sweden	EF3
RAN #72 **	13 June – 16 June 2016	Busan, Korea	TTA
RAN #73 **	19 Sep. – 22 Sep. 2016	tbd, USA	NAF3
RAN #74 **	5 Dec. – 8 Dec. 2016	Vienna, Austria	EF3
RAN #75 **	6 March - 9 March 2017	Dubrovnik, Croatia	EF3
RAN #76 **	6 June - 8 June 2017	tbd, USA	NAF3
RAN #77 **	11 Sep. - 14 Sep. 2017	tbd, Japan	ARIB & TTC
RAN #78 **	18 Dec. - 21 Dec. 2017	Lisbon, Portugal	EF3

***: RAN Workshop on REL-12 and onwards

**: 1 week TSG i.e. in same week with CT and SA, therefore RAN starting on Monday

22 Any other business

RAN1 chair: 5G channel modelling ad hoc planned for mid of March 16 (probably in the US)
Telecom Italia: for the host you should check how many people plan to attend this ad hoc

RAN chair: will send out further information about 5G requirements ad hoc end of Jan.2015 soon after RAN #70

RAN4 chair: MIMO OTA ad hoc confirmed for Mon-Tue (18-19.01.2016) in the same hotel as NB-IOT ad hoc in Budapest.

RAN vice-chairman (Fujitsu): presented an overview about RAN4 statistics of the Tuomo's RAN4 area; he also thanked Kevin Holley who is leaving Telefonica

RAN chair and RAN as a whole: thanked Tuomo Säynäjäkangas (Nokia Networks) and Kevin Holley (Telefonica) for their great work in/for 3GPP RAN

23 Closing of the meeting

The TSG RAN chairman Dino Flore (Qualcomm) thanked the delegates for participating and contributing to RAN meeting #70, he thanked the host for organizing the meeting and he closed the meeting on Thursday Dec. 10th, 2015 at about 17:00.

Annex A:
List of participants

The list of participants of this RAN meeting #70 is attached to this report.

Total number of participants: 236 (registered before the meeting: 300)

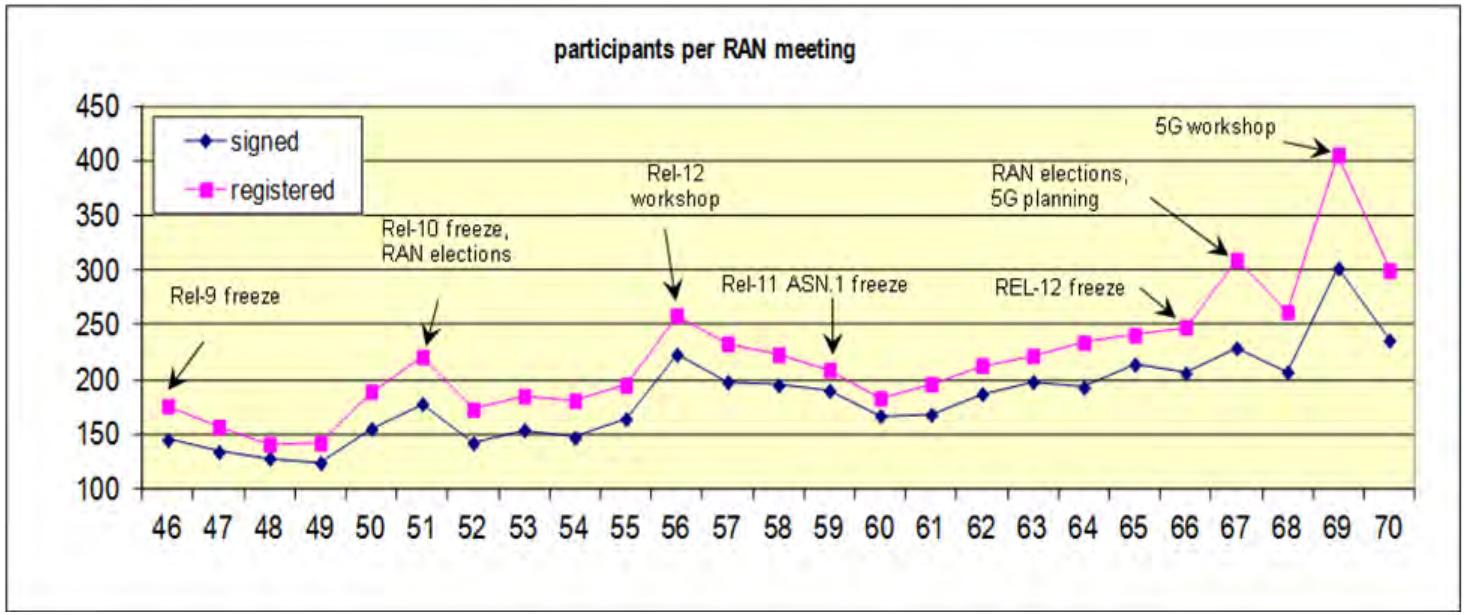


Fig. A-1: Participants per RAN meeting (registered beforehand and actual participants who signed)
(1 week TSG: #63, #66 and further meetings)

Annex B:
List of Tdocs

The list of Tdocs of this RAN meeting #70 is attached to this report.

Total number of Tdocs: 672 (RP-151629 - RP-152300) of which 647 Tdocs are available, i.e. 25 are not available and they are withdrawn.

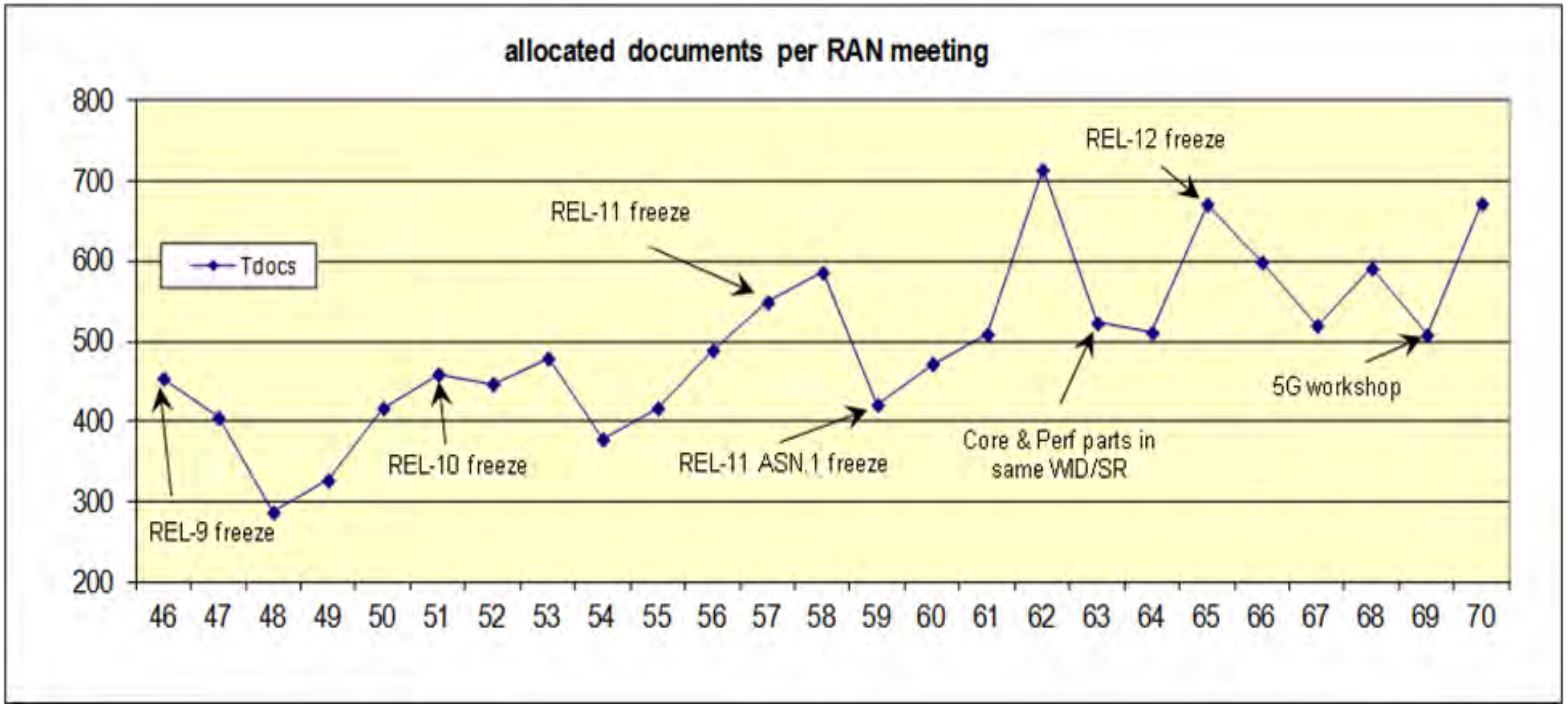


Fig. B-1: Number of allocated Tdocs per RAN meeting

Annex C:
Incoming liaison statements (LSin)

In total 27 LSs/LTIs were received for RAN #70 (0 of them received during the meeting). All 27 LSs/LTIs were treated.

RAN Tdoc	title (incoming LS, to, cc, contact)	source	REL	WI	RAN action requested	status	LS answer to source	additional comments
RP-151646	Reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (C1-153966; to: SA; cc: CT, RAN, SA2, SA4, RAN2, CT3, CT4; contact: Ericsson)	CT1	Rel-10	ECSRA_LAA	no	noted	no	
RP-151647	Reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (C3-154252; to: SA; cc: SA2, SA4, RAN2, CT1, CT3, CT4, CT, RAN; contact: Nokia Networks)	CT3	Rel-10	ECSRA_LAA	no	noted	no	
RP-151648	LS Response to R2-154793 on Indoor Positioning impacts to 29.171 (C4-151875; to: RAN2; cc: RAN; contact: NextNav)	CT4	Rel-13	UTRA_LTE_iPos_enh-Core	no	noted	no	R2-154793 was only sent to CT4 and not to/cc RAN
RP-151649	LS on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (SP-150574; to: SA2, SA4, RAN2, CT1, CT3, CT4; cc: CT, RAN; contact: Samsung)	SA	Rel-10	ECSRA_LAA	no	noted	RP-152279	
RP-151650	LS regarding LAA Coexistence (WFA_LS_20151006; to: RAN4, RAN; cc: -; contact: CEO Wi-Fi Alliance)	Wi-Fi Alliance	Rel-13	LTE_LAA-Perf	no	noted	RP-152234	
RP-151651	LS regarding new WI proposal: Indoor Positioning Enhancements for UTRA and LTE (ATC_LS_20150923; to: RAN4; cc: RAN; contact: American Tower Corporation VP Compliance)	American Tower Corporation	Rel-13	UTRA_LTE_iPos_enh-Core	no	noted	no	
RP-151652	LS regarding new WI proposal: Indoor Positioning Enhancements for UTRA and LTE (CC_LS_20150925; to: RAN4; cc: RAN; contact: Crown Castle Sales Director)	Crown Castle	Rel-13	UTRA_LTE_iPos_enh-Core	no	noted	no	
RP-151653	LS regarding new WI proposal: Indoor Positioning Enhancements for UTRA and LTE (SBA_LS_20150929; to: RAN4; cc: RAN; contact: SBA Communications Corporation VP)	SBS Communications Corporation	Rel-13	UTRA_LTE_iPos_enh-Core	no	noted	no	
RP-151654	Response to LS Update S5-154456 on Study on OAM support for Licensed Shared Access (ETSI TC RRS(15)031016r4; to: SA; cc: RAN, SA5; contact: Intel)	ETSI TC RRS	Rel-13	FS_OAM_LSA	no	noted	no	S5-154456 was not sent to/cc RAN

RAN Tdoc	title (incoming LS, to, cc, contact)	source	REL	WI	RAN action requested	status	LS answer to source	additional comments
RP-151655	LS on the standardization status of Intelligent Transport Systems (ITS) radio interface technologies (ITU-R WP5A/TEMP/310(Rev.1); to: RAN, SA, ARIB, AWG, CCSA, ETSI TC ERM, IEEE, TIA, and TTA; cc: -; contact: ITU-R WP5A Counsellor)	ITU-R WP5A	Rel-14	FS_LTE_V2X	yes	noted	postponed	RAN action requested for ITU-R WP5A meeting in May 2016; LS answer postponed to RAN #71
RP-151656	LS on Announcing the Publication of GSMA TS.24 V.3.0 – Operator Acceptance Values for Device Antenna Performance (GSMA_TSG_AP_147_LS; to: RAN, RAN4, RAN5, GCF - Steering Group, CAG, PAG, PTCRB, CTIA, EU-TCAM, EU Radio Spectrum Committee, ETSI MSG, ETSI ERM, Digital Europe, MMF, ANEC; cc: GSMA PSMC, GSMA Networks Group , GSMA Device Security Group, GSMA N2020; contact: Orange)	GSMA TSG AP	Rel-13	LTE_UTRA_TRP_TRS-Core, UTRA_LTE_MIMO_OTA-Core	yes	noted	no	
RP-151657	Reply LS to RP-151623 on IPsec tunnelling mechanism for LTE-WiFi aggregation (S3-152467; to: RAN, RAN2, SA2; cc: -; contact: NTT DOCOMO)	SA3	Rel-13	LTE_WLAN_radio_legacy-Core	not explicitly	noted	no	
RP-151658 ***	Draft Letter to ITU in answer to ITU-R WP5D/TEMP/619 = RP-151140 related to the revision of Recommendations for generic unwanted emission characteristics (R5-156165; to: RAN; cc: -; contact: Ericsson)	RAN5	Rel-12	-	yes	noted	no	RAN5 has drafted a reply to ITU-R WP5D LS received at RAN #69 in RP-151140; before sending it out the LS has to pass SA and PCG review; taken into account when drafting RP-152218
RP-151659	Reply LS to RP-151555 on work on time synchronization and future target requirements (ITU-T SG15/COM15–LS298–E; to: RAN; cc: -; contact: Ericsson)	ITU-T SG15	Rel-13	-	yes	noted	no	RAN #69 received ITU-T SG15/COM15-LS266-E = RP-151142 and answered in RP-151555; RAN action requested by 01.02.16
RP-151661	LS on study on PC5 transport for V2V services (R1-157903; to: RAN; cc: -; contact: LG)	RAN1	Rel-14	FS_LTE_V2X	not explicitly	noted	no	
RP-151662	Reply LS to SP-150574 = RP-151649 on 3GPP Work on Explicit Congestion Notification for Lower Layer Protocols (R2-157038; to: SA; cc: CT, RAN, SA2, SA4, CT1, CT3, CT4; contact: Samsung)	RAN2	Rel-10	ECSRA_LAA	no	noted	no	ECSRA_LAA = Enabling Coder Selection and Rate Adaptation for UTRAN and E-UTRAN for Load Adaptive Applications
RP-151663 ***	Draft Letter to ITU in answer to ITU-R WP5D/TEMP/619 = RP- 151140 related to the revision of Recommendations for generic unwanted emission characteristics (R4-158243; to: RAN; cc: -; contact: Ericsson)	RAN4	Rel-12	-	yes	noted	no	RAN4 has drafted a reply to ITU-R WP5D LS received at RAN #69 in RP-151140; before sending it out the LS has to pass SA and PCG review; compare RP-151658; taken into accound when drafting RP-152218

RAN Tdoc	title (incoming LS, to, cc, contact)	source	REL	WI	RAN action requested	status	LS answer to source	additional comments
RP-151664	LS on LAA co-existence testing (R4-158439; to: RAN; cc: -; contact: Ericsson)	RAN4	Rel-13	LTE_LAA	not explicitly	noted	no	
RP-151665	Reply LS to RP-151623 on New WI on LTE-WLAN RAN Level Integration supporting legacy WLAN (S2-154407; to: RAN, RAN2, RAN3, SA3; cc: -; contact: Alcatel-Lucent)	SA2	Rel-13	LTE_WLAN_radio_legacy-Core	not explicitly	noted	no	
RP-151666	LS on NB-IoT Evaluations (R1-157742; to: RAN; cc: RAN2, RAN3, RAN4, SA2; contact: Huawei)	RAN1	Rel-13	NB_IOT-Core	not explicitly	noted	no	
RP-151667	LS regarding the CTIA MIMO OTA Test Plan Roadmap (CTIA_LS_151110; to: RAN4, RAN5; cc: RAN; contact: CTIA MOSG Co-Chair (Verizon))	CTIA MIMO OTA Sub-Group	Rel-13	LTE_UTRA_TRP_TRS-Core, UTRA_LTE_MIMO_OTA-Core	no	noted	no	CTIA = Cellular Telecommunications & Internet Association
RP-151668	LS on 5G use cases from verticals (EC_LS_151201; to: RAN; cc: -; contact: EC)	European Commission (EC) DG CONNECT - Unit EI, Network Technologies	Rel-14	-	yes	noted	no	
RP-151669 ***	Draft Letter to ITU on final submission for IMT-2000 CDMA DS and IMT-2000 CDMA TDD toward Rev. 13 of Rec. ITU-R M.1457 (RT-150021; to: CT, RAN; cc: -; contact: Telecom Italia)	RAN ITU-R ad hoc	Rel-12	-	yes	noted	no	this LTI is also provided to CT and CT will reply back to RAN; RAN will finally provide their draft incl. CT comments for review to SA and from there to PCG for approval; ATIS will then provide to approved version to ITU-R WP5D on behalf of the OPs
RP-152127	LS on indoor positioning (FCC_LS151202; to: RAN; cc: -; contact: Chief Public Safety and Homeland Security Bureau)	FCC	Rel-13	UTRA_LTE_iPos_enh-Core	not explicitly	noted	no	

RAN Tdoc	title (incoming LS, to, cc, contact)	source	REL	WI	RAN action requested	status	LS answer to source	additional comments
RP-152128	LS on recently established new Study Group 20 (SG20) (ITU-T SG20/COM 20-LS008-E; to: GERAN, RAN, CT, SA, ISO/TC 122; ISO/TC 204; ISO/IEC JTC 1/SC 6; ISO/IEC JTC 1/SC 31; ISO/IEC JTC 1/WG 7; ISO/IEC JTC 1/WG 10; ISO/IEC JTC 1/WG 11; GS1 EPCglobal; EC/IERC; ETSI; CEN; OMA; YRP; Ecma International; GISFI; TIA; GSC MSTF; OGC; oneM2M; ISO/IEC JTC 1/SC 29/WG11 for Augmented Reality (AR) standards; 3GPP; W3C; IETF; IEEE-SA; AHCIET; ANEC; ANSI; BSI; CCSA; CDP; CEDARE; CEN/CENELEC/ETSI SSCC CG; CIC; CITEL; City Protocol Society (CPS); The Climate Group; Digital Europe; DIN; DKE (DIN/VDE); ECLAC; ETNO; ETSI TC EE; ETSI TC Smart M2M; European Commission (DG Connect); GeSI; GSMA; ICLEI; IDB; IEC/SEG1; IEC/TC 100; IEC/TC 111; IEEE; ISO/TC 268/SC 1; MOHURD; SAC; StEP; UNCDF; UNDP; UNECE; UNEP; UNESCO; UNFCCC; UN-Habitat; UNIDO; WBCSD for GHG Protocol; WHO; WMO; cc: -; contact: ETRI)	ITU-T SG20	Rel-13	NB_IOT-Core	no	noted	no	
RP-152129	LS on NGMN Requirement metrics and deployment scenarios for 5G (NGMN_LS_151204; to: RAN; cc: - ; contact: Telefonica)	NGMN	Rel-14	-	not explicitly	noted	no	
RP-152197	LS on NGMN view of 5G as an end-to-end ecosystem - Alignment of 3GPP SA and RAN (NGMN_LS_20151204b; to: SA, RAN; cc: -; contact: Telefonica)	NGMN	Rel-14	-	yes	noted	no	

***: uses Letter to ITU template (LTI)

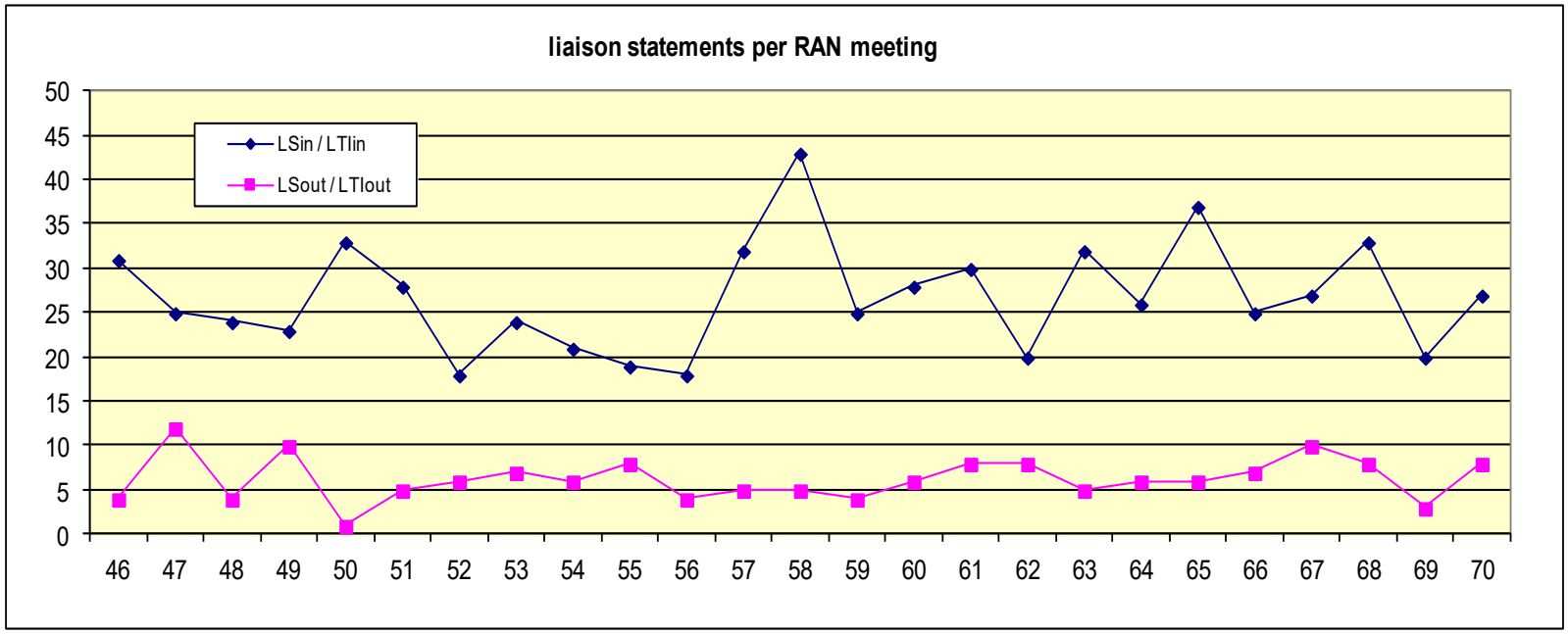


Fig. C-1: Number of incoming/outgoing Liason Statements (LS) and Letter to ITU (LTI) per RAN meeting

Annex D:
Outgoing liaison statements (LSout)

Only final outgoing LSs are listed here.
8 outgoing LSs/LTIs of RAN #70 (0 of them approved by email after the meeting):

final LS Tdoc	title	to	cc	contact	reply to	release	WI	comments
RP-152234	LAA coexistence tests	Wi-Fi Alliance	RAN4, IEEE 802 LMSC	RAN Chairman (Qualcomm), RAN4 Chairman (Samsung)	RP-151650	Rel-13	LTE_LAA	
RP-152244 ***	Draft Letter to ITU on final submission for IMT-2000 CDMA DS and IMT-2000 CDMA TDD toward Rev. 13 of Rec. ITU-R M.1457	SA	-	Telecom Italia	-	Rel-12	-	this is a draft version to be sent to SA; from there it will go to PCG for approval and then it is submitted by ATIS to ITU-R WP5D on behalf of the OPs; provided to SA on Wed noon
RP-152245 ***	Draft Letter to ITU on IMT-Advanced related to the revision of Recommendations for generic unwanted emission characteristics	SA	-	Telecom Italia	ITU-R WP5D/TEMP /619 = RP-151140	Rel-12	-	merging RAN4 reply RP-151663 and RAN5 reply RP-151658 into one reply that is provided to SA for review before it is going to PCG for approval and from there via ATIS to ITU-R WP5D; provided to SA on Wed noon
RP-152279	3GPP Work on Explicit Congestion Notification for Lower Layer Protocols	SA	RAN3	Huawei	SP-150574 = RP-151649	Rel-10	ECSRA_LAA	provided to SA on Thu afternoon
RP-152280	LAA	IEEE 802 LMSC, Wi-Fi Alliance	RAN1, RAN2, RAN4	RAN Chairman (Qualcomm), RAN1 Chairman (NTT DOCOMO)	-	Rel-13	LTE_LAA	
RP-152295	Introduction of new establishment cause for mobile-originating cause	RAN2, CT1, RAN3	SA2	Nokia Networks	-	Rel-12	TEI12	related to way forward RP-152225
RP-152296	S1 signalling solutions for non-NB-IoT UEs	SA2, SA3, SA, CT1, CT3, CT4, RAN2, RAN3	RAN1	Ericsson	-	Rel-13	NB_IOT-Core	provided to SA on Thu afternoon
RP-152299	NB-IOT	RAN1	RAN2	Huawei	-	Rel-13	NB_IOT-Core	

***: uses Letter to ITU template (LTI)

Annex E:
List of Change Requests (CRs)

This list of 1482 CRs includes all CRs submitted to RAN #70 with 1457 approved CRs.

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
25.101	1084	-	Rel-13	B	RP-152171	R4-156419	approved	Introduction of Band 65 to TS 25.101	13.0.0	13.1.0	R4	LTE_1980_2170_REG1-Core
25.101	1086	-	Rel-13	B	RP-152157	R4-156490	approved	Introduction of Band 67	13.0.0	13.1.0	R4	LTE_CA_700EU_B20-Core
25.101	1087	-	Rel-13	B	RP-152172	R4-157180	approved	Introduction of Band 66	13.0.0	13.1.0	R4	LTE_AWS_EXT-Core
25.101	1088	1	Rel-13	B	RP-152140	R4-158313	approved	25.101CR to introduce DB-DC-HSUPA	13.0.0	13.1.0	R4	HSUPA_DB_MC-Core, DC_HSUPA_CS-Core
25.101	1089	1	Rel-13	B	RP-152142	R4-158371	approved	Out-of-synchronization requirement for UTRA TPC algorithm 3	13.0.0	13.1.0	R4	UTRA_EDL_TPC-Perf
25.101	1090	-	Rel-13	B	RP-152175	R4-157357	approved	Introduction of Region 3 requirement in Band 65	13.0.0	13.1.0	R4	LTE_1980_2170_REG3-Core
25.101	1091	1	Rel-13	B	RP-152144	R4-158366	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.101	13.0.0	13.1.0	R4	DC_HSUPA_CS-Core
25.101	1092	-	Rel-13	B	RP-152173	R4-157605	approved	Introduction of 1447-1467MHz Band into 25.101	13.0.0	13.1.0	R4	LTE_TDD_1447MHz_China-Core
25.104	0712	1	Rel-13	B	RP-152141	R4-156707	approved	Introduction of DB-DC-HSUPA for TS25.104	13.0.0	13.1.0	R4	HSUPA_DB_MC-Core
25.104	0717	-	Rel-13	B	RP-152171	R4-156492	approved	Introduction of Band 65	13.0.0	13.1.0	R4	LTE_1980_2170_REG1-Core
25.104	0718	1	Rel-11	F	RP-152132	R4-156719	approved	Tx IM requirement correction	11.11.0	11.12.0	R4	TEI11
25.104	0719	-	Rel-12	A	RP-152132	R4-156553	approved	Tx IM requirement correction	12.6.0	12.7.0	R4	TEI11
25.104	0720	-	Rel-13	A	RP-152132	R4-156554	approved	Tx IM requirement correction	13.0.0	13.1.0	R4	TEI11
25.104	0721	-	Rel-13	B	RP-152157	R4-156561	approved	Introduction of E-UTRA Band 67 co-existence requirements	13.0.0	13.1.0	R4	LTE_CA_700EU_B20-Core
25.104	0722	-	Rel-13	B	RP-152172	R4-157181	approved	Introduction of Band 66	13.0.0	13.1.0	R4	LTE_AWS_EXT-Core
25.104	0723	-	Rel-13	B	RP-152173	R4-157606	approved	Introduction of 1447-1467MHz Band into 25.104	13.0.0	13.1.0	R4	LTE_TDD_1447MHz_China-Core
25.104	0724	1	Rel-11	F	RP-152132	R4-158359	approved	BS Spec improvements: TS 25.104 Corrections	11.11.0	11.12.0	R4	TEI11
25.104	0725	-	Rel-12	A	RP-152132	R4-157741	approved	BS Spec improvements: TS 25.104 Corrections	12.6.0	12.7.0	R4	TEI11
25.104	0726	-	Rel-13	A	RP-152132	R4-157742	approved	BS Spec improvements: TS 25.104 Corrections	13.0.0	13.1.0	R4	TEI11
25.104	0727	-	Rel-11	F	RP-152132	R4-157839	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	11.11.0	11.12.0	R4	LTE_CA_enh-Core
25.104	0728	-	Rel-12	A	RP-152132	R4-157840	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	12.6.0	12.7.0	R4	LTE_CA_enh-Core
25.104	0729	-	Rel-13	A	RP-152132	R4-157841	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	13.0.0	13.1.0	R4	LTE_CA_enh-Core
25.104	0733	1	Rel-11	F	RP-152132	R4-158224	approved	Correction of UEM requirement for multi-band base station	11.11.0	11.12.0	R4	MB_MSR_RF-Core

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
25.104	0734	-	Rel-12	A	RP-152132	R4-157997	approved	Correction of UEM requirement for multi-band base station	12.6.0	12.7.0	R4	MB_MSR_RF-Core
25.104	0735	-	Rel-13	A	RP-152132	R4-157998	approved	Correction of UEM requirement for multi-band base station	13.0.0	13.1.0	R4	MB_MSR_RF-Core
25.105	0312	-	Rel-11	F	RP-152132	R4-157213	approved	TX intermodulation requirement correction	11.8.0	11.9.0	R4	TEI11
25.105	0313	-	Rel-12	A	RP-152132	R4-157214	approved	TX intermodulation requirement correction	12.1.0	12.2.0	R4	TEI11
25.123	0561	-	Rel-13	B	RP-152171	R4-157353	approved	Introduction of band 65	12.1.2	13.0.0	R4	LTE_1980_2170_REG1-Perf
25.123	0562	-	Rel-13	B	RP-152172	R4-157789	approved	AWS Extension	12.1.2	13.0.0	R4	LTE_AWS_EXT-Perf
25.133	1411	-	Rel-13	B	RP-152144	R4-156268	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.133	12.8.0	13.0.0	R4	DC_HSUPA_CS-Core
25.133	1414	1	Rel-13	B	RP-152141	R4-158372	approved	25.133CR to introduce DB-DC-HSUPA in Rel-13	12.8.0	13.0.0	R4	HSUPA_DB_MC-Core
25.133	1415	-	Rel-13	B	RP-152171	R4-157354	approved	Introduction of band 65	12.8.0	13.0.0	R4	LTE_1980_2170_REG1-Perf
25.133	1416	-	Rel-13	B	RP-152172	R4-157790	approved	AWS Extension	12.8.0	13.0.0	R4	LTE_AWS_EXT-Perf
25.133	1418	-	Rel-13	B	RP-152143	R4-158188	approved	CR for extended DRX in UTRA	12.9.0	13.0.0	R4	UTRA_SDATA_POWSAV-Core
25.141	0735	1	Rel-13	B	RP-152141	R4-156708	approved	Introduction of DB-DC-HSUPA for TS25.141	13.0.0	13.1.0	R4	HSUPA_DB_MC-Core
25.141	0739	1	Rel-11	F	RP-152132	R4-156720	approved	Tx IM requirement correction	11.11.0	11.12.0	R4	TEI11
25.141	0740	-	Rel-12	A	RP-152132	R4-156556	approved	Tx IM requirement correction	12.7.0	12.8.0	R4	TEI11
25.141	0741	-	Rel-13	A	RP-152132	R4-156557	approved	Tx IM requirement correction	13.0.0	13.1.0	R4	TEI11
25.141	0742	-	Rel-13	B	RP-152157	R4-156562	approved	Introduction of E-UTRA Band 67 co-existence requirements	13.0.0	13.1.0	R4	LTE_CA_700EU_B20-Core
25.141	0743	-	Rel-13	B	RP-152172	R4-157184	approved	Introduction of Band 66	13.0.0	13.1.0	R4	LTE_AWS_EXT-Perf
25.141	0744	-	Rel-13	B	RP-152171	R4-157188	approved	Introduction of Band 65	13.0.0	13.1.0	R4	LTE_1980_2170_REG1-Perf
25.141	0745	-	Rel-13	B	RP-152173	R4-157609	approved	Introduction of 1447-1467MHz Band into 25.141	13.0.0	13.1.0	R4	LTE_TDD_1447MHz_China-Core
25.141	0746	1	Rel-11	F	RP-152132	R4-158348	approved	BS Spec improvements: TS 25.141 Corrections	11.11.0	11.12.0	R4	TEI11
25.141	0747	-	Rel-12	A	RP-152132	R4-157744	approved	BS Spec improvements: TS 25.141 Corrections	12.7.0	12.8.0	R4	TEI11
25.141	0748	-	Rel-13	A	RP-152132	R4-157745	approved	BS Spec improvements: TS 25.141 Corrections	13.0.0	13.1.0	R4	TEI11
25.141	0749	-	Rel-11	F	RP-152132	R4-157842	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	11.11.0	11.12.0	R4	LTE_CA_enh-Core
25.141	0750	-	Rel-12	A	RP-152132	R4-157843	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	12.7.0	12.8.0	R4	LTE_CA_enh-Core
25.141	0751	-	Rel-13	A	RP-152132	R4-157844	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	13.0.0	13.1.0	R4	LTE_CA_enh-Core
25.141	0755	1	Rel-11	F	RP-152132	R4-158225	approved	Correction of UEM requirement for multi-band base station	11.11.0	11.12.0	R4	MB_MSR_RF-Perf
25.141	0756	-	Rel-12	A	RP-152132	R4-158000	approved	Correction of UEM requirement for multi-band base station	12.7.0	12.8.0	R4	MB_MSR_RF-Perf
25.141	0757	-	Rel-13	A	RP-152132	R4-158001	approved	Correction of UEM requirement for multi-band base station	13.0.0	13.1.0	R4	MB_MSR_RF-Perf
25.141	0758	-	Rel-11	F	RP-152132	R4-158345	approved	Clarification on the transmitter intermodulation requirement in TS 25.141	11.11.0	11.12.0	R4	TEI11
25.141	0759	1	Rel-12	A	RP-152132	R4-158429	approved	Clarification on the transmitter intermodulation requirement in TS 25.141	12.7.0	12.8.0	R4	TEI11
25.141	0760	-	Rel-13	A	RP-152132	R4-158347	approved	Clarification on the transmitter intermodulation requirement in TS 25.141	13.0.0	13.1.0	R4	TEI11

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
25.142	0316	-	Rel-11	F	RP-152132	R4-157215	approved	TX intermodulation requirement correction	11.4.0	11.5.0	R4	TEI11
25.142	0317	-	Rel-12	A	RP-152132	R4-157216	approved	TX intermodulation requirement correction	12.1.0	12.2.0	R4	TEI11
25.211	0322	4	Rel-13	B	RP-152023	R1-157714	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.211	12.1.0	13.0.0	R1	DC_HSUPA_CS-Core
25.213	0119	4	Rel-13	B	RP-152023	R1-157713	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.213	12.0.0	13.0.0	R1	DC_HSUPA_CS-Core
25.213	0121	1	Rel-13	B	RP-152030	R1-157587	approved	Introduction of HSPA Dual-Band UL carrier aggregation	12.0.0	13.0.0	R1	HSUPA_DB_MC-Core
25.214	0741	1	Rel-13	F	RP-152029	R1-156150	approved	25.214 CR (Rel-13, F) Clarifications on definitions and CQI reporting in Multiflow 3F-4C configuration	13.0.0	13.1.0	R1	HSDPA_MFTX_enh-Core
25.214	0743	1	Rel-13	B	RP-152039	R1-157586	approved	Introduction of downlink TPC enhancements for UMTS	13.0.0	13.1.0	R1	UTRA_EDL_TPC-Core
25.300	0022	1	Rel-13	B	RP-152063	R2-157008	approved	Introduction of extended DRX in Idle mode	12.4.0	13.0.0	R2	UTRA_SDATA_POWSAV-Core
25.300	0025	1	Rel-13	B	RP-152061	R2-156985	approved	Introduction of retrievable configurations	12.4.0	13.0.0	R2	UTRA_EDL_L23-Core
25.300	0026	1	Rel-13	B	RP-152061	R2-156987	approved	Introduction of URA_PCH with seamless transition	12.4.0	13.0.0	R2	UTRA_EDL_L23-Core
25.300	0027	1	Rel-13	B	RP-152061	R2-156989	approved	Introduction of improved synchronized RRC procedures	12.4.0	13.0.0	R2	UTRA_EDL_L23-Core
25.300	0028	1	Rel-13	B	RP-152061	R2-157000	approved	Introduction of optimization from IDLE to CONNECTED state	12.4.0	13.0.0	R2	UTRA_EDL_L23-Core
25.300	0029	1	Rel-13	B	RP-152062	R2-156999	approved	Introduction of enhanced state transition	12.4.0	13.0.0	R2	UTRA_EDL_L23-Core
25.300	0030	1	Rel-13	B	RP-152061	R2-156992	approved	Introduction of blind HARQ retransmissions for HSDPA	12.4.0	13.0.0	R2	UTRA_EDL_L23-Core
25.300	0031	1	Rel-13	B	RP-152060	R2-156944	approved	CR to 25.300 on the introduction of Downlink TPC enhancements for UMTS	12.4.0	13.0.0	R2	UTRA_EDL_TPC-Core
25.300	0032	-	Rel-13	B	RP-152064	R2-156938	approved	Introduction of NAICS for UMTS	12.4.0	13.0.0	R2	UTRA_NAICS-Core
25.300	0033	1	Rel-13	B	RP-152066	R2-157077	approved	Introduction of Application specific Congestion control for Data Communication (ACDC) in UTRAN	12.4.0	13.0.0	R2	ACDC-RAN-Core
25.300	0034	-	Rel-13	B	RP-151825	-	withdrawn	Introduction of L2 and L3 Downlink enhancements for UMTS in TS 25.300	12.4.0		R2	UTRA_EDL_L23-Core
25.301	0111	1	Rel-13	B	RP-152061	R2-156997	approved	Introduction of URA_PCH with seamless transition	12.0.0	13.0.0	R2	UTRA_EDL_L23-Core
25.302	0238	1	Rel-10	F	RP-152047	R2-156836	approved	Clarification for physical channel combination of DC-HSUPA and MC-HSDPA	10.2.0	10.3.0	R2	RANimp-DC_HSUPA, 4C_HSDPA-Core, TEI10
25.302	0239	1	Rel-11	A	RP-152047	R2-156837	approved	Clarification for physical channel combination of DC-HSUPA and MC-HSDPA	11.5.0	11.6.0	R2	RANimp-DC_HSUPA, 4C_HSDPA-Core, TEI10, 8C_HSDPA-Core
25.302	0240	1	Rel-12	A	RP-152047	R2-156838	approved	Clarification for physical channel combination of DC-HSUPA and MC-HSDPA	12.1.0	12.2.0	R2	RANimp-DC_HSUPA, 4C_HSDPA-Core, TEI10, 8C_HSDPA-Core
25.302	0241	1	Rel-13	A	RP-152047	R2-156839	approved	Clarification for physical channel combination of DC-HSUPA and MC-HSDPA	13.0.0	13.1.0	R2	RANimp-DC_HSUPA, 4C_HSDPA-Core, TEI10, 8C_HSDPA-Core
25.302	0242	1	Rel-13	B	RP-152065	R2-156983	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.302	13.0.0	13.1.0	R2	DC_HSUPA_CS-Core
25.304	0388	-	Rel-12	F	RP-152052	R2-156064	approved	Corrections to WLAN/3GPP radio interworking	12.6.0	12.7.0	R2	UTRA_LTE_WLAN_interw-Core
25.304	0389	1	Rel-13	B	RP-152063	R2-157009	approved	Introduction of extended DRX in Idle mode	12.6.0	13.0.0	R2	UTRA_SDATA_POWSAV-Core

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25.304	0391	1	Rel-13	B	RP-152066	R2-156940	approved	Introduction of Application specific Congestion control for Data Communication (ACDC) in UTRAN	12.6.0	13.0.0	R2	ACDC-RAN-Core
25.304	0392	1	Rel-13	B	RP-152075	R2-157172	approved	Extension of Frequency Priorities	12.6.0	13.0.0	R2	LTE_MC_load-Core
25.305	0125	2	Rel-13	B	RP-152068	R2-156942	revised	RAT-Independent positioning enhancements	12.1.0		R2	UTRA_LTE_iPos_enh-Core
25.305	0125	3	Rel-13	B	RP-152109	-	approved	RAT-Independent positioning enhancements	12.1.0	13.0.0	R2	UTRA_LTE_iPos_enh-Core
25.306	0490	1	Rel-13	B	RP-152065	R2-156982	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.306	12.6.0	13.0.0	R2	DC_HSUPA_CS-Core
25.306	0495	1	Rel-13	B	RP-152060	R2-156945	approved	CR to 25.306 on the introduction of Downlink TPC enhancements for UMTS	12.6.0	13.0.0	R2	UTRA_EDL_TPC-Core
25.306	0496	1	Rel-13	B	RP-152058	R2-157074	approved	Introduction of DB-DC-HSUPA	12.6.0	13.0.0	R2	HSUPA_DB_MC-Core
25.306	0497	-	Rel-13	B	RP-152110	-	approved	RAT-Independent positioning enhancements	12.6.0	13.0.0	R2	UTRA_LTE_iPos_enh-Core
25.308	0173	1	Rel-13	B	RP-152061	R2-156994	approved	Introduction of blind HARQ retransmissions for HSDPA	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.319	0136	1	Rel-13	B	RP-152065	R2-156981	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.319	12.3.0	13.0.0	R2	DC_HSUPA_CS-Core
25.319	0137	1	Rel-13	B	RP-152061	R2-156988	approved	Introduction of URA_PCH with seamless transition	12.3.0	13.0.0	R2	UTRA_EDL_L23-Core
25.319	0138	2	Rel-13	B	RP-152058	R2-157075	approved	Introduction of DB-DC-HSUPA to 25.319	12.3.0	13.0.0	R2	HSUPA_DB_MC-Core
25.321	0814	1	Rel-13	B	RP-152061	R2-156990	approved	Introduction of improved synchronized RRC procedures	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.321	0815	1	Rel-13	B	RP-152061	R2-156993	approved	Introduction of blind HARQ retransmissions for HSDPA	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.331	5787	1	Rel-11	F	RP-152050	R2-156840	approved	Clarification for configuring HARQ A/N repetition with Multiflow	11.14.0	11.15.0	R2	HSDPA_MFTX-Core
25.331	5788	1	Rel-12	A	RP-152050	R2-156841	approved	Clarification for configuring HARQ A/N repetition with Multiflow	12.7.0	12.8.0	R2	HSDPA_MFTX-Core
25.331	5789	1	Rel-13	A	RP-152050	R2-156842	approved	Clarification for configuring HARQ A/N repetition with Multiflow	13.0.0	13.1.0	R2	HSDPA_MFTX-Core
25.331	5790	1	Rel-13	B	RP-152065	R2-156984	approved	Introduction of Dual Carrier HSUPA enhancements for UTRAN CS in TS 25.331	13.0.0	13.1.0	R2	DC_HSUPA_CS-Core
25.331	5791	-	Rel-12	F	RP-152052	R2-156065	approved	Corrections to WLAN/3GPP radio interworking	12.7.0	12.8.0	R2	UTRA_LTE_WLAN_interw-Core
25.331	5792	-	Rel-13	A	RP-152052	R2-156066	approved	Corrections to WLAN/3GPP radio interworking	13.0.0	13.1.0	R2	UTRA_LTE_WLAN_interw-Core
25.331	5793	1	Rel-13	B	RP-152063	R2-157010	approved	Introduction of extended DRX in Idle mode	13.0.0	13.1.0	R2	UTRA_SDATA_POWSAV-Core
25.331	5796	1	Rel-12	F	RP-152051	R2-157003	approved	Correction for Second Broadcast Channel (BCH2) message handling	12.7.0	12.8.0	R2	UTRA_SIBenh-Core
25.331	5797	1	Rel-13	A	RP-152051	R2-157004	approved	Correction for Second Broadcast Channel (BCH2) message handling	13.0.0	13.1.0	R2	UTRA_SIBenh-Core
25.331	5807	1	Rel-13	B	RP-152061	R2-156986	approved	Introduction of retrievable configurations	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.331	5808	1	Rel-13	B	RP-152061	R2-157071	approved	Introduction of URA_PCH with seamless transition	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.331	5809	1	Rel-13	B	RP-152061	R2-156991	approved	Introduction of improved synchronized RRC procedures	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.331	5812	1	Rel-13	B	RP-152062	R2-156998	approved	Introduction of enhanced state transition	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.331	5813	1	Rel-13	B	RP-152061	R2-156995	approved	Introduction of blind HARQ retransmissions for HSDPA	13.0.0	13.1.0	R2	UTRA_EDL_L23-Core
25.331	5814	1	Rel-12	F	RP-152051	R2-157001	approved	Correction for UE reading of System Information Block type 24 on timer expiration	12.7.0	12.8.0	R2	EDCH_enh-Core
25.331	5815	1	Rel-13	A	RP-152051	R2-157002	approved	Correction for UE reading of System Information Block type 24 on timer expiration	13.0.0	13.1.0	R2	EDCH_enh-Core

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25.331	5816	2	Rel-13	B	RP-152066	R2-157076	approved	Introduction of Application specific Congestion control for Data Communication (ACDC) in UTRAN	13.0.0	13.1.0	R2	ACDC-RAN-Core
25.331	5817	1	Rel-13	B	RP-152075	R2-157147	approved	Extension of Frequency Priorities	13.0.0	13.1.0	R2	LTE_MC_load-Core
25.331	5818	1	Rel-13	B	RP-152060	R2-156946	approved	CR to 25.331 on the introduction of Downlink TPC enhancements for UMTS	13.0.0	13.1.0	R2	UTRA_EDL_TPC-Core
25.331	5819	2	Rel-13	B	RP-152068	R2-156943	approved	RAT-Independent positioning enhancements	13.0.0	13.1.0	R2	UTRA_LTE_iPos_enh-Core
25.331	5820	3	Rel-13	B	RP-152058	R2-157073	approved	Introduction of DB-DC-HSUPA	13.0.0	13.1.0	R2	HSUPA_DB_MC-Core
25.331	5821	2	Rel-13	B	RP-151992	-	withdrawn	Introduction of Autonomous State Transmission	13.0.0		R2	UTRA_EDL_L23-Core
25.331	5823	2	Rel-13	F	RP-152084	R2-157070	approved	Access stratum Rel-13 indicator	13.0.0	13.1.0	R2	TEI13
25.331	5824	-	Rel-13	B	RP-152017	-	withdrawn	RAT-Independent positioning enhancements	13.0.0		R2	UTRA_LTE_iPos_enh-Core
25.331	5825	-	Rel-13	B	RP-151826	-	withdrawn	Introduction of L2 and L3 Downlink enhancements for UMTS in TS 25.331	13.0.0		R2	UTRA_EDL_L23-Core
25.401	0145	2	Rel-13	B	RP-152096	R3-152402	approved	Introduction of DECOR feature	12.0.0	13.0.0	R3	DECOR-UTRA_LTE-Core
25.401	0146	2	Rel-13	B	RP-152090	R3-152867	approved	Introduction of DL enhancements	12.0.0	13.0.0	R3	UTRA_EDL_L23-Core
25.401	0149	-	Rel-13	B	RP-152091	R3-152849	approved	Introduction of Traffic Volume measurement for RAN Sharing	12.0.0	13.0.0	R3	RSE_UTRA_GUSH-Core
25.410	0077	1	Rel-13	B	RP-152088	R3-152113	approved	Introduction of improvements to CS/PS coordination in UTRAN Shared Network	12.0.0	13.0.0	R3	CSPS_Coord-UTRA-Core
25.413	1294	7	Rel-13	B	RP-152088	R3-152277	approved	Introduction of improvements to CS/PS coordination in UTRAN Shared Network	12.4.0	13.0.0	R3	CSPS_Coord-UTRA-Core
25.413	1298	2	Rel-13	C	RP-152108	R3-152318	approved	Enhancement of the RESET RESOURCE procedure	12.4.0	13.0.0	R3	TEI13
25.413	1303	5	Rel-13	B	RP-152096	R3-152861	approved	Introduction of Dedicated Core Network (DCN) feature	12.4.0	13.0.0	R3	DECOR-UTRA_LTE-Core
25.413	1304	3	Rel-13	B	RP-152094	R3-152794	approved	Support WI Power Saving enhancements for UMTS	12.4.0	13.0.0	R3	UTRA_SDATA_POWSAV-Core
25.413	1307	3	Rel-13	B	RP-152097	R3-152856	revised	RAT-Independent positioning enhancements for RANAP	12.4.0		R3	UTRA_LTE_iPos_enh-Core
25.413	1307	4	Rel-13	B	RP-152016	-	approved	RAT-Independent positioning enhancements for RANAP	12.4.0	13.0.0	R3	UTRA_LTE_iPos_enh-Core
25.423	1873	3	Rel-13	B	RP-152091	R3-152382	approved	Enhancement to legacy load balancing mechanism	13.0.0	13.1.0	R3	RSE_UTRA_GUSH-Core
25.423	1874	3	Rel-13	B	RP-152090	R3-152793	approved	Introduction of blind HARQ retransmissions	13.0.0	13.1.0	R3	UTRA_EDL_L23-Core
25.423	1875	1	Rel-13	B	RP-152089	R3-152797	approved	Introduction of TPC enhancements	13.0.0	13.1.0	R3	UTRA_EDL_TPC-Core
25.423	1876	2	Rel-13	B	RP-152092	R3-152913	approved	Introduction of NAICS	13.0.0	13.1.0	R3	UTRA_NAICS-Core
25.423	1877	1	Rel-13	B	RP-152090	R3-152835	approved	Introduction of improved synchronized RRC procedures	13.0.0	13.1.0	R3	UTRA_EDL_L23-Core
25.423	1878	1	Rel-13	B	RP-152087	R3-152808	approved	Introduction of Dual-Band Dual-Cell HSUPA Carrier Aggregation	13.0.0	13.1.0	R3	HSUPA_DB_MC
25.423	1879	1	Rel-13	B	RP-152093	R3-152810	approved	Introduce Dual Carrier/Dual Band HSUPA operation with DPDCH channel feature	13.0.0	13.1.0	R3	DC_HSUPA_CS-Core
25.425	0187	2	Rel-13	B	RP-152090	R3-152391	approved	Introduction of IDLE to CONNECTED mode transition optimization	12.2.0	13.0.0	R3	UTRA_EDL_L23-Core
25.433	2069	3	Rel-13	B	RP-152090	R3-152792	approved	Introduction of blind HARQ retransmissions	13.0.0	13.1.0	R3	UTRA_EDL_L23-Core
25.433	2070	1	Rel-13	B	RP-152095	R3-152649	approved	System Information Update to support the new SIBs introduced in ACDC	13.0.0	13.1.0	R3	ACDC-RAN-Core
25.433	2071	1	Rel-13	B	RP-152089	R3-152796	approved	Introduction of TPC enhancements	13.0.0	13.1.0	R3	UTRA_EDL_TPC-Core

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25.433	2072	2	Rel-13	B	RP-152092	R3-152909	approved	Introduction of NAICS	13.0.0	13.1.0	R3	UTRA_NAICS-Core
25.433	2073	1	Rel-13	B	RP-152090	R3-152834	approved	Introduction of improved synchronized RRC procedures	13.0.0	13.1.0	R3	UTRA_EDL_L23-Core
25.433	2074	1	Rel-13	B	RP-152087	R3-152807	approved	Introduction of Dual-Band Dual-Cell HSUPA Carrier Aggregation	13.0.0	13.1.0	R3	HSUPA_DB_MC
25.433	2075	1	Rel-13	B	RP-152093	R3-152809	approved	Introduce Dual Carrier/Dual Band HSUPA operation with DPDCH channel feature	13.0.0	13.1.0	R3	DC_HSUPA_CS-Core
25.433	2077	1	Rel-13	B	RP-152090	R3-152918	approved	Introduction of URA_PCH with seamless transition	13.0.0	13.1.0	R3	UTRA_EDL_L23-Core
25.435	0315	2	Rel-13	B	RP-152090	R3-152390	approved	Introduction of IDLE to CONNECTED mode transition optimization	12.1.0	13.0.0	R3	UTRA_EDL_L23-Core
25.446	0021	2	Rel-13	B	RP-152101	R3-152384	approved	Clarification on muting behavior in SC-PTM	12.1.0	13.0.0	R3	LTE_SC_PTM-Core
25.453	0157	7	Rel-13	B	RP-152097	R3-152920	approved	RAT-Independent positioning enhancements for PCAP	12.2.0	13.0.0	R3	UTRA_LTE_iPos_enh-Core
25.453	0158	-	Rel-13	B	RP-152018	-	withdrawn	RAT-Independent positioning enhancements	12.2.0		R3	UTRA_LTE_iPos_enh-Core
25.461	0091	-	Rel-13	B	RP-152105	R3-152434	approved	Introduction of Band 65	12.1.0	13.0.0	R3	LTE_1980_2170_REG1-Core
25.461	0092	-	Rel-13	B	RP-152106	R3-152435	approved	Introduction of Band 66	12.1.0	13.0.0	R3	LTE_AWS_EXT-Core
25.461	0093	-	Rel-13	B	RP-152104	R3-152436	approved	Introduction of Band 67	12.1.0	13.0.0	R3	LTE_CA_700EU_B20-Core
25.461	0094	1	Rel-13	B	RP-152107	R3-152879	approved	Introduction of band 45 in 25.461	12.1.0	13.0.0	R3	LTE_TDD_1447MHz_China-Core
25.466	0056	2	Rel-13	B	RP-152107	R3-152880	approved	Introduction of band 45 in 25.466	12.2.0	13.0.0	R3	LTE_TDD_1447MHz_China-Core
25.466	0057	-	Rel-13	F	RP-152108	R3-152679	approved	Extension of operating bands field	12.2.0	13.0.0	R3	TEI13
25.466	0058	-	Rel-13	B	RP-152105	R3-152680	approved	Introduction of band 65	12.2.0	13.0.0	R3	LTE_1980_2170_REG1-Core
25.466	0059	-	Rel-13	B	RP-152106	R3-152681	approved	Introduction of band 66	12.2.0	13.0.0	R3	LTE_AWS_EXT-Core
25.466	0060	-	Rel-13	B	RP-152104	R3-152682	approved	Introduction of band 67	12.2.0	13.0.0	R3	LTE_CA_700EU_B20-Core
25.993	0119	1	Rel-13	B	RP-152059	R2-156937	approved	Introduction of EVS CS RABs	12.0.0	13.0.0	R2	EVSoCS_UTRAN-Core
34.108	0987	-	Rel-11	F	RP-151696	R5-155025	approved	Removal of technical content in 34.108 v11.14.0 and substitution with pointer to the next Release	11.14.0	11.15.0	R5	TEI11_Test
34.114	0061	-	Rel-11	F	RP-151696	R5-155026	approved	Removal of technical content in 34.114 v11.3.0 and substitution with pointer to the next Release	11.3.0	11.4.0	R5	TEI11_Test
34.121-1	1613	-	Rel-11	F	RP-151696	R5-155027	approved	Removal of technical content in 34.121-1 v11.7.0 and substitution with pointer to the next Release	11.7.0	11.8.0	R5	TEI11_Test
34.121-1	1614	1	Rel-12	F	RP-151688	R5-155891	approved	Update Test Tolerances and Test requirements for Test cases 8.3.4a and 8.3.4b	12.1.0	12.2.0	R5	TEI10_Test
34.121-1	1615	2	Rel-12	F	RP-151702	R5-156164	approved	Addition of power control test cases for Enhanced UTRA DCH	12.1.0	12.2.0	R5	UTRA_DCHenh-UEConTest
34.121-1	1616	-	Rel-12	F	RP-151702	R5-155582	approved	Addition of DCH demodulation test cases for enhanced DCH	12.1.0	12.2.0	R5	UTRA_DCHenh-UEConTest
34.121-2	0163	-	Rel-11	F	RP-151696	R5-155028	approved	Removal of technical content in 34.121-2 v11.5.0 and substitution with pointer to the next Release	11.5.0	11.6.0	R5	TEI11_Test
34.122	0437	-	Rel-11	F	RP-151688	R5-155677	approved	34.122 - Correction to In-band blocking test procedure.	11.11.0	11.12.0	R5	TEI10_Test
34.123-1	3799	-	Rel-11	F	RP-151696	R5-155029	approved	Removal of technical content in 34.123-1 v11.7.0 and substitution with pointer to the next Release	11.7.0	11.8.0	R5	TEI11_Test
34.123-1	3800	-	Rel-12	F	RP-151681	R5-155062	approved	Updates to UTRA UE Capabilities Audit test case 8.1.5.7	12.1.0	12.2.0	R5	TEI_Test

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34.123-1	3801	-	Rel-12	F	RP-151688	R5-155079	approved	Update to NIMTC test case 12.4.3.2a	12.1.0	12.2.0	R5	TEI10_Test
34.123-1	3803	-	Rel-12	F	RP-151702	R5-155128	approved	Void Test Cases 8.2.2.89 and 8.2.2.90	12.1.0	12.2.0	R5	UTRA_DCHenh-UEConTest
34.123-1	3804	1	Rel-12	F	RP-151702	R5-155768	approved	Introduction of Test Case 8.2.1.47	12.1.0	12.2.0	R5	UTRA_DCHenh-UEConTest
34.123-1	3805	1	Rel-12	F	RP-151702	R5-155769	approved	Introduction of Test Case 8.2.1.48	12.1.0	12.2.0	R5	UTRA_DCHenh-UEConTest
34.123-1	3806	-	Rel-12	F	RP-151684	R5-155286	approved	Correction to Rel-8 DC HSDPA testcase 8.3.4.16	12.1.0	12.2.0	R5	TEI8_Test
34.123-1	3807	-	Rel-12	F	RP-151683	R5-155288	approved	Correction to Rel-7 NISPC testcase 11.9.1	12.1.0	12.2.0	R5	TEI7_Test
34.123-1	3808	-	Rel-12	F	RP-151684	R5-155291	approved	Correction to Rel-8 SS testcase 15.10.5	12.1.0	12.2.0	R5	TEI8_Test
34.123-1	3809	-	Rel-12	F	RP-151687	R5-155294	approved	Correction to Rel-9 DC HSUPA testcase 7.1.9.5	12.1.0	12.2.0	R5	TEI9_Test
34.123-1	3810	1	Rel-12	F	RP-151687	R5-155974	approved	Correction to Rel-9 DC HSUPA testcase 7.1.9.1	12.1.0	12.2.0	R5	TEI9_Test
34.123-1	3811	-	Rel-12	F	RP-151687	R5-155317	approved	Correction to Rel-9 DC HSUPA testcase 7.1.9.2	12.1.0	12.2.0	R5	TEI9_Test
34.123-1	3812	-	Rel-12	F	RP-151684	R5-155320	approved	Correction to Rel-8 MAC-i/is testcase 7.2.2.15	12.1.0	12.2.0	R5	TEI8_Test
34.123-1	3814	-	Rel-12	F	RP-151683	R5-155322	approved	Correction to Rel-7 CPC testcase 7.1.6.2.11	12.1.0	12.2.0	R5	TEI7_Test
34.123-1	3815	-	Rel-12	F	RP-151688	R5-155328	approved	Correction to Rel-10 NIMTC testcase 9.4.3.7	12.1.0	12.2.0	R5	TEI10_Test
34.123-1	3816	-	Rel-12	F	RP-151701	R5-155348	approved	Correction of Beacon RSSI parameters in test case 8.2.10.3	12.1.0	12.2.0	R5	UTRA_LTE_WLAN_interw-UEConTest
34.123-1	3817	-	Rel-12	F	RP-151701	R5-155349	approved	Correction to test case 8.2.10.6	12.1.0	12.2.0	R5	UTRA_LTE_WLAN_interw-UEConTest
34.123-1	3818	1	Rel-12	F	RP-151701	R5-155960	approved	Addition of new generic procedures to check UE does not offload to UTRAN	12.1.0	12.2.0	R5	UTRA_LTE_WLAN_interw-UEConTest
34.123-1	3819	1	Rel-12	F	RP-151684	R5-155766	approved	Correction to Rel-8 MAC-i/is testcase 7.2.3.38	12.1.0	12.2.0	R5	TEI8_Test
34.123-1	3820	-	Rel-12	F	RP-151696	R5-155519	approved	Editorial Update of TC 8.3.1.1f	12.1.0	12.2.0	R5	TEI11_Test
34.123-1	3822	-	Rel-12	F	RP-151684	R5-155658	approved	Correction to SS test case 15.9.2	12.1.0	12.2.0	R5	TEI8_Test
34.123-1	3823	1	Rel-12	F	RP-151711	R5-155954	approved	New UEPCOP test case 12.2.1.1b PS attach / accepted / PSM	12.1.0	12.2.0	R5	MTCe-UEPCOP-UEConTest
34.123-1	3824	-	Rel-12	F	RP-151701	R5-155959	approved	Update of WLAN Offload procedures to and from UTRA	12.1.0	12.2.0	R5	UTRA_LTE_WLAN_interw-UEConTest
34.123-2	0749	-	Rel-11	F	RP-151696	R5-155030	approved	Removal of technical content in 34.123-2 v11.7.0 and substitution with pointer to the next Release	11.7.0	11.8.0	R5	TEI11_Test
34.123-2	0750	1	Rel-12	F	RP-151702	R5-155977	approved	Update Applicability for DCH Enhancement Test Cases	12.1.0	12.2.0	R5	UTRA_DCHenh-UEConTest
34.123-2	0752	-	Rel-12	F	RP-151681	R5-155627	approved	Correction to test condition for UTRAN/GERAN idle mode test cases	12.1.0	12.2.0	R5	TEI_Test
34.123-2	0754	1	Rel-12	F	RP-151711	R5-155957	approved	Addition of applicability statements for new UEPCOP test case	12.1.0	12.2.0	R5	MTCe-UEPCOP-UEConTest
34.123-2	0756	-	Rel-12	F	RP-151701	R5-155767	approved	Correction to the applicability conditions C919, C920 and C921	12.1.0	12.2.0	R5	UTRA_LTE_WLAN_interw-UEConTest
34.123-2	0757	-	Rel-12	F	RP-151681	R5-155976	approved	Change of applicability and change of number of test executions for test case 8.1.5.7	12.1.0	12.2.0	R5	TEI_Test
34.123-3	3436	-	Rel-11	F	RP-151696	R5-155031	approved	Removal of technical content in 34.123-3 v11.7.0 and substitution with pointer to the next Release	11.7.0	11.8.0	R5	TEI11_Test
34.123-3	3437	-	Rel-12	F	RP-151701	R5-155056	approved	3GPP / WLAN Radio Interworking: Introduction of Test Model	12.1.0	12.2.0	R5	UTRA_LTE_WLAN_interw-UEConTest

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34.123-3	3438	-	Rel-12	F	RP-151702	R5-155059	approved	DCH Enhancements: Introduction of Test Model	12.1.0	12.2.0	R5	UTRA_DCHenh-UEConTest
34.123-3	3439	-	Rel-12	F	RP-151682	R5-155501	approved	Routine maintenance for TS 34.123-3	12.1.0	12.2.0	R5	TEI5_Test
34.123-3	3440	-	Rel-12	B	RP-151691	R5s150611	approved	Addition of Rel-8 UTRA SS testcase 9.4.10 to SSNITZ testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3441	-	Rel-12	B	RP-151691	R5s150613	approved	Addition of Rel-8 UTRA SS testcase 12.2.1.13 to SSNITZ testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3442	-	Rel-12	B	RP-151691	R5s150615	approved	Addition of Rel-8 UTRA SS testcase 12.2.1.14 to SSNITZ testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3443	-	Rel-12	B	RP-151691	R5s150617	approved	Addition of Rel-8 UTRA SS test case 12.2.1.15 to SSNITZ testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3444	-	Rel-12	B	RP-151691	R5s150674	approved	Addidtion of Rel-10 NIMTC testcase 9.4.3.7 to UTRAN testsuite	12.1.0	12.2.0	R5	TEI10_Test
34.123-3	3445	-	Rel-12	B	RP-151691	R5s150682	approved	Addidtion of Rel-10 NIMTC testcase 12.4.3.2a to UTRAN testsuite	12.1.0	12.2.0	R5	TEI10_Test
34.123-3	3446	-	Rel-12	F	RP-151691	R5s150716	approved	Correction to Rel-8 testcase 8.3.4.16	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3447	-	Rel-12	F	RP-151691	R5s150795	approved	Correction to Rel-7 NISPC testcase 11.9.1	12.1.0	12.2.0	R5	TEI7_Test
34.123-3	3448	-	Rel-12	B	RP-151691	R5s150825	approved	Addition of GCF WI-161 DC-HSU test case 7.1.9.2 to HSPA9_ENH ATS	12.1.0	12.2.0	R5	TEI9_Test
34.123-3	3449	-	Rel-12	B	RP-151691	R5s150829	approved	Addidtion of Rel-10 NIMTC testcase 9.4.5.4.7 to UTRAN testsuite	12.1.0	12.2.0	R5	TEI10_Test
34.123-3	3450	-	Rel-12	B	RP-151691	R5s150830	approved	Addidtion of Rel-10 NIMTC testcase 12.2.2.3a to UTRAN testsuite	12.1.0	12.2.0	R5	TEI10_Test
34.123-3	3451	-	Rel-12	B	RP-151691	R5s150878	approved	Addidtion of Rel-8 MAC-i/is testcase 7.2.2.15 to HSPA8_ENH testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3452	-	Rel-12	B	RP-151691	R5s150880	approved	Addidtion of Rel-8 MAC-i/is testcase 7.2.3.38 to HSPA8_ENH testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3453	-	Rel-12	B	RP-151691	R5s150889	approved	Addition of Rel-8 UTRA SS testcase 15.4.4 to SSNITZ testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3454	-	Rel-12	B	RP-151691	R5s150891	approved	Addition of Rel-8 UTRA SS testcase 15.4.6 to SSNITZ testsuite	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3455	-	Rel-12	F	RP-151691	R5s150893	approved	Correction to Rel-8 SS testcase 15.8.5	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3456	-	Rel-12	F	RP-151691	R5s150894	approved	Correction to UTRA NIMTC testcase 9.4.5.5	12.1.0	12.2.0	R5	TEI10_Test
34.123-3	3457	-	Rel-12	F	RP-151691	R5s150895	approved	Correction to Rel-8 SS test cases 9.4.10, 12.2.1.13, 12.2.1.14, 12.2.1.15	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3458	-	Rel-12	F	RP-151691	R5s150896	approved	Correction to Rel-8 SS testcase 12.2.1.15	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3459	-	Rel-12	F	RP-151691	R5s150897	approved	Correction to Rel-8 SS testcase 15.7.25	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3460	-	Rel-12	F	RP-151691	R5s150898	approved	Correction to Rel-8 SS testcase 15.7.x and 15.10.x	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3461	-	Rel-12	F	RP-151691	R5s150949	approved	Correction to ETWS testcase 8.1.1.19	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3462	-	Rel-12	F	RP-151691	R5s150950	approved	Correction to Rel-10 NIMTC testcase 11.1.3.4	12.1.0	12.2.0	R5	TEI10_Test
34.123-3	3463	-	Rel-12	F	RP-151691	R5s150951	approved	Correction to Rel-10 NAS testcase 12.4.1.4f	12.1.0	12.2.0	R5	TEI10_Test

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34.123-3	3464	-	Rel-12	F	RP-151691	R5s150952	approved	Correction to CSG testcases	12.1.0	12.2.0	R5	TEI8_Test
34.123-3	3465	-	Rel-12	F	RP-151691	R5s150953	approved	Correction to Rel-9 CSG testcases 6.3.1.4	12.1.0	12.2.0	R5	TEI9_Test
34.123-3	3466	-	Rel-12	B	RP-151691	R5s150958	approved	Addition of GCF WI-161 DC-HSU test case 7.1.9.5 to HSPA9_ENH ATS	12.1.0	12.2.0	R5	TEI9_Test
34.123-3	3467	-	Rel-12	F	RP-151690	-	approved	CR to 34.123-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.123-3 (prose), Annex A	12.1.0	12.2.0	R5	TEI8_Test
34.229-1	0744	-	Rel-12	F	RP-151684	R5-155068	approved	Correction for pub-gruu and temp-gruu in A.1.6 NOTIFY	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0745	-	Rel-12	F	RP-151684	R5-155069	approved	Correction for message body of NOTIFY at step 7 in C.19	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0746	1	Rel-12	F	RP-151703	R5-155918	approved	Editorial updates for EVS	12.7.0	12.8.0	R5	EVS_codec-UEConTest
34.229-1	0747	1	Rel-12	F	RP-151684	R5-155994	approved	Update of P-Access-Network-Info header field in A.2.7 ACK	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0748	1	Rel-12	F	RP-151684	R5-155913	approved	Corrections to the IMS Deregistration procedure	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0749	1	Rel-12	F	RP-151684	R5-155995	approved	Corrections to IMS test case 15.29	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0750	1	Rel-12	F	RP-151684	R5-155914	approved	Corrections to IMS emergency test case 19.3.1	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0751	-	Rel-12	F	RP-151684	R5-155172	approved	Correction to test case 19.5.10	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0752	1	Rel-12	F	RP-151684	R5-155997	approved	Clarification on usage of IR.92	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0753	-	Rel-12	F	RP-151684	R5-155174	approved	Correction to A.2.1 regarding lr parameter	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0754	-	Rel-12	F	RP-151684	R5-155175	approved	Corrections to IMS test cases 19.3.3 and 19.3.4	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0756	-	Rel-12	F	RP-151684	R5-155177	approved	Corrections to MMI command for Three Way Conferencing	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0757	-	Rel-12	F	RP-151684	R5-155179	approved	Correction to Record-Route header in C.10	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0758	1	Rel-12	F	RP-151684	R5-155915	approved	Referencing RFC 7315	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0759	-	Rel-12	F	RP-151684	R5-155182	approved	Removal of duplicated text in C.28	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0760	-	Rel-12	F	RP-151684	R5-155183	approved	Correction to uniqueness of branch parameters	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0761	-	Rel-12	F	RP-151684	R5-155363	approved	Update annex C.29.2 with BSF requirement	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0762	-	Rel-12	F	RP-151703	R5-155458	approved	Editorial update of test case 12.23	12.7.0	12.8.0	R5	EVS_codec-UEConTest
34.229-1	0763	1	Rel-12	F	RP-151703	R5-155919	approved	Editorial update of test case 12.25	12.7.0	12.8.0	R5	EVS_codec-UEConTest
34.229-1	0764	1	Rel-12	F	RP-151687	R5-155998	approved	Correction to IMS Emergency call test case 19.1.3	12.7.0	12.8.0	R5	TEI9_Test
34.229-1	0766	1	Rel-12	F	RP-151703	R5-155920	approved	Add new test case for MT MTSI speech call / EVS / AMR-WB IO mode	12.7.0	12.8.0	R5	EVS_codec-UEConTest
34.229-1	0773	1	Rel-12	F	RP-151684	R5-155916	approved	Corrections to the use of the PUBLISH method	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0774	2	Rel-12	F	RP-151684	R5-155943	approved	Correction to Annex A regarding additional information	12.7.0	12.8.0	R5	TEI8_Test
34.229-1	0776	-	Rel-12	F	RP-151713	R5-155694	approved	Correction to Annex C.40	12.7.0	12.8.0	R5	TEI12_Test
34.229-2	0155	-	Rel-10	F	RP-151688	R5-155032	approved	Removal of technical content in 34.229-2 v10.3.0 and substitution with pointer to the next Release	10.3.0	10.4.0	R5	TEI10_Test
34.229-2	0156	-	Rel-11	F	RP-151696	R5-155033	approved	Removal of technical content in 34.229-2 v11.0.0 and substitution with pointer to the next Release	11.0.0	11.1.0	R5	TEI11_Test
34.229-2	0158	-	Rel-12	F	RP-151703	R5-155468	approved	Add applicability for new MT EVS test case	12.6.0	12.7.0	R5	EVS_codec-UEConTest
34.229-2	0159	-	Rel-12	F	RP-151684	R5-155760	approved	Remove outdated reference	12.6.0	12.7.0	R5	TEI8_Test

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34.229-3	0332	-	Rel-10	F	RP-151688	R5-155034	approved	Removal of technical content in 34.229-3 v10.7.0 and substitution with pointer to the next Release	10.7.0	10.8.0	R5	TEI10_Test
34.229-3	0333	-	Rel-11	F	RP-151693	R5s150692	approved	Correction to IMS Emergency Call test case 19.3.1	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0334	-	Rel-11	F	RP-151693	R5s150721	approved	Correction to usage of GRUU in IMS registration	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0335	-	Rel-11	F	RP-151693	R5s150739	approved	Correction to GCF WI-154 IMS emergency Call testcase 19.3.1	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0336	-	Rel-11	B	RP-151693	R5s150755	approved	Addition of IMS video call test case 15.11a	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0337	-	Rel-11	F	RP-151693	R5s150786	approved	Correction to IMS test case 10.1	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0338	-	Rel-11	F	RP-151693	R5s150809	approved	Correction to IMS emergency test case 19.5.7	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0339	-	Rel-11	F	RP-151693	R5s150817	approved	Correction to initiation of Emergency Calls	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0340	-	Rel-11	F	RP-151693	R5s150818	approved	Correction to IMS Emergency Call Test Case 19.1.5	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0341	-	Rel-11	F	RP-151693	R5s150835	approved	Correction to IMS Registration	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0342	-	Rel-11	F	RP-151693	R5s150841	approved	Correction to MTSI MO speech call procedures in AnnexC21	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0343	-	Rel-11	F	RP-151693	R5s150843	approved	Correction to common IMS functions to handling IMS Dialogs	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0344	-	Rel-11	F	RP-151693	R5s150850	approved	Correction to usage of Max-Forwards	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0345	-	Rel-11	F	RP-151693	R5s150851	approved	Corrections to IMS emergency test case 19.3.1	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0346	-	Rel-11	F	RP-151693	R5s150854	approved	Correction to number of SIP dialogs	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0347	-	Rel-11	F	RP-151693	R5s150864	approved	Correction in IMS Emergency Call test case 19.5.7	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0348	-	Rel-11	F	RP-151693	R5s150865	approved	Corrections to RTP and RTCP handling	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0349	-	Rel-11	F	RP-151693	R5s150868	approved	Corrections to IMS Emergency call Testcase 19.1.3	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0350	-	Rel-11	F	RP-151693	R5s150873	approved	Corrections to IMS authentication test cases 9.1 and 9.2	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0351	-	Rel-11	F	RP-151693	R5s150886	approved	Correction to IMS registration expiry time	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0352	-	Rel-11	F	RP-151693	R5s150888	approved	Correction to IMS REGISTER message	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0353	-	Rel-11	F	RP-151693	R5s150900	approved	Correction to Emergency Call Normal Services in 34.229-1	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0354	-	Rel-11	F	RP-151693	R5s150908	approved	Corrections to usage of GRUU	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0355	-	Rel-11	F	RP-151693	R5s150909	approved	Corrections to IMS three-way session creation test cases	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0356	-	Rel-11	F	RP-151693	R5s150910	approved	Correction to GCF WI-103 15.21a Three way session testcase	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0357	-	Rel-11	F	RP-151693	R5s150919	approved	Correction to postamble for test cases 6.3 and 7.1	11.1.0	11.2.0	R5	TEI8_Test
34.229-3	0358	-	Rel-11	F	RP-151693	R5s150972	approved	Correction to IMS emergency test case 19.5.6	11.1.0	11.2.0	R5	TEI9_Test
34.229-3	0359	-	Rel-11	F	RP-151692	-	approved	CR to 34.229-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 34.229-3 (prose), Annex A	11.1.0	11.2.0	R5	TEI8_Test
34.902	0023	1	Rel-11	F	RP-151688	R5-155890	approved	Update Test Tolerance analyses for TS 34.121-1 Test cases 8.3.4a and 8.3.4b	11.0.0	11.1.0	R5	TEI10_Test
36.101	3168 a	-	Rel-10	F	RP-152131	R4-155447	approved	Corrections to applicability of CSI requirements for low UE categories (Rel-10)	10.20.0	10.21.0	R4	TEI10
36.101	3169 a	-	Rel-11	F	RP-152132	R4-155448	approved	Corrections to applicability of CSI requirements for low UE categories (Rel-11)	11.14.0	11.15.0	R4	TEI11
36.101	3172	1	Rel-13	B	RP-152158	R4-156793	approved	Introduction of UE RF requriements for CA_42E	13.1.0	13.2.0	R4	LTE_CA_C_B42_4DL-Core
36.101	3173	-	Rel-13	F	RP-152137	R4-155503	approved	Correction on UL 64QAM measurment channels	13.1.0	13.2.0	R4	LTE_UL64QAM-Core

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.101	3175	-	Rel-13	A	RP-152131	R4-155529	approved	Release 13 CAT A CR to align NS_04 values to meet FCC OOBE requirements	12.9.0	13.0.0	R4	TEI12, LTE_TDD_2600_US-Core
36.101	3176	1	Rel-12	F	RP-152131	R4-156732	approved	Release 12 CR to align NS_04 values to meet FCC OOBE requirements	12.9.0	12.10.0	R4	TEI12, LTE_TDD_2600_US-Core
36.101	3178	-	Rel-13	D	RP-152136	R4-155532	approved	Maintenance of eIMTA PDSCH demodulation test	13.1.0	13.2.0	R4	TEI12
36.101	3179	1	Rel-12	D	RP-152136	R4-156661	approved	Editorial correction for eIMTA CQI tests	12.9.0	12.10.0	R4	TEI12
36.101	3180	1	Rel-13	F	RP-152136	R4-156662	approved	Correction for eIMTA CQI tests	13.1.0	13.2.0	R4	TEI12
36.101	3182	1	Rel-12	F	RP-152135	R4-156609	approved	CR to finalize demodulation performance requirements for D2D Communication	12.9.0	12.10.0	R4	LTE_D2D_Prox-Perf
36.101	3185	1	Rel-12	F	RP-152133	R4-156672	approved	Simplified CA fading Test method becomes optional	12.9.0	12.10.0	R4	LTE_CA_B39_B41_B41-Perf, LTE_CA_B1_B41_B41-Perf
36.101	3186	-	Rel-13	A	RP-152133	R4-155571	approved	Simplified CA fading Test method becomes optional	13.1.0	13.2.0	R4	LTE_CA_B39_B41_B41-Perf, LTE_CA_B1_B41_B41-Perf
36.101	3187	1	Rel-12	F	RP-152135	R4-156608	approved	CR on corrections for ProSe Direct Discovery demodulation requirements	12.9.0	12.10.0	R4	LTE_D2D_Prox-Perf
36.101	3190	-	Rel-12	F	RP-152133	R4-155639	approved	Correction of the applicable UE categories for 256QAM UE demodulation performance requirements (Rel-12)	12.9.0	12.10.0	R4	LTE_SC_enh_L1-Perf
36.101	3191	-	Rel-13	A	RP-152133	R4-155640	approved	Correction of the applicable UE categories for 256QAM UE demodulation performance requirements (Rel-13)	13.1.0	13.2.0	R4	LTE_SC_enh_L1-Perf
36.101	3192	1	Rel-12	F	RP-152133	R4-156685	approved	Correction of TDD-FDD CA performance requirements (Rel-12)	12.9.0	12.10.0	R4	LTE_CA_Mult-Perf
36.101	3193	1	Rel-13	F	RP-152133	R4-156686	approved	Correction of TDD-FDD CA performance requirements (Rel-13)	13.1.0	13.2.0	R4	LTE_CA_Mult-Perf
36.101	3194	-	Rel-12	F	RP-152133	R4-155643	approved	Correction on FDD CA and TDD TDD CA performance requirements (Rel-12)	12.9.0	12.10.0	R4	LTE_CA_Mult-Perf
36.101	3195	1	Rel-13	F	RP-152133	R4-156698	approved	Correction on FDD CA and TDD CA performance requirements (Rel-13)	13.1.0	13.2.0	R4	LTE_CA_Mult-Perf
36.101	3196	-	Rel-13	B	RP-152163	R4-155646	approved	CR on introduction of 5CC FDD/TDD CA demodulation performance requirements	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B7_B7_B28-Perf, LTE_CA_B3_B3_B7_B7_B28-Perf,
36.101	3197	-	Rel-13	B	RP-152163	R4-155648	approved	CR on introduction of 5CC TDD FDD CA demodulation performance requirements	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B19_B42_B42-Perf, LTE_CA_B1_B19_B21_B42_B42-Perf,
36.101	3198	2	Rel-9	F	RP-152130	R4-158169	approved	CR: Removal of 1.4MHz MBMS test (Rel-9)	9.22.0	9.23.0	R4	MBMS_LTE
36.101	3199	1	Rel-10	A	RP-152130	R4-158170	approved	CR: Removal of 1.4MHz MBMS test (Rel-10)	10.20.0	10.21.0	R4	MBMS_LTE
36.101	3200	1	Rel-11	A	RP-152130	R4-158171	approved	CR: Removal of 1.4MHz MBMS test (Rel-11)	11.14.0	11.15.0	R4	MBMS_LTE
36.101	3201	1	Rel-12	A	RP-152130	R4-158172	approved	CR: Removal of 1.4MHz MBMS test (Rel-12)	12.9.0	12.10.0	R4	MBMS_LTE
36.101	3203	-	Rel-11	F	RP-152132	R4-155694	approved	Correction of the AMPR table for NS_14 in TS 36.101 R11	11.14.0	11.15.0	R4	TEI11
36.101	3204	-	Rel-12	A	RP-152132	R4-155695	approved	Correction of the AMPR table for NS_14 in TS 36.101 R12	12.9.0	12.10.0	R4	TEI11

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.101	3205	-	Rel-13	A	RP-152132	R4-155696	approved	Correction of the AMPR table for NS_14 in TS 36.101 R13	13.1.0	13.2.0	R4	TEI11
36.101	3206	-	Rel-13	F	RP-152134	R4-155698	approved	Correction of the 2UL CA co-existence table for CA_18A-28A	13.1.0	13.2.0	R4	TEI13
36.101	3209	-	Rel-13	B	RP-152152	R4-155730	approved	Introduction of 3DL/2UL DC	13.1.0	13.2.0	R4	LTE_dualC_enh-Core
36.101	3210	1	Rel-13	F	RP-152139	R4-156734	approved	Correction of uplink configuration for CA_42D	13.1.0	13.2.0	R4	LTE_CA_C_B42_3DL-Core
36.101	3212	-	Rel-13	B	RP-152133	R4-155825	approved	Introduction of dual uplink CA into 36.101	13.1.0	13.2.0	R4	LTE_CA_2UL-A4-Core
36.101	3213	-	Rel-12	F	RP-152133	R4-155875	approved	Corrections to the CSI minimum requirement for PUSCH 3-2 (Rel-12)	12.9.0	12.10.0	R4	LTE_eDL_MIMO_enh-Perf
36.101	3214	-	Rel-13	A	RP-152133	R4-155876	approved	Corrections to the CSI minimum requirement for PUSCH 3-2 (Rel-13)	13.1.0	13.2.0	R4	LTE_eDL_MIMO_enh-Perf
36.101	3215	1	Rel-12	F	RP-152133	R4-156642	approved	Corrections to MIMO Correlation Matrices using cross polarized antennas (Rel-12)	12.9.0	12.10.0	R4	LTE_eDL_MIMO_enh-Perf
36.101	3216	-	Rel-13	A	RP-152133	R4-155884	approved	Corrections to MIMO Correlation Matrices using cross polarized antennas (Rel-12)	13.1.0	13.2.0	R4	LTE_eDL_MIMO_enh-Perf
36.101	3221	1	Rel-13	B	RP-152157	R4-156796	approved	Introducing B20 + B67 CA into TS 36.101	13.1.0	13.2.0	R4	LTE_CA_700EU_B20-Core
36.101	3224	1	Rel-12	F	RP-152136	R4-156641	approved	CR for UE performance tests for intra-band contiguous CA with minimum channel spacing on Band 41	12.9.0	12.10.0	R4	TEI12
36.101	3225	-	Rel-13	A	RP-152136	R4-155914	approved	CR for UE performance tests for intra-band contiguous CA with minimum channel spacing on Band 41	13.1.0	13.2.0	R4	TEI12
36.101	3226	1	Rel-12	F	RP-152136	R4-156701	approved	Correction in SNR definition for CSI test	12.9.0	12.10.0	R4	TEI12
36.101	3227	1	Rel-13	A	RP-152136	R4-156702	approved	Correction in SNR definition for CSI test	13.1.0	13.2.0	R4	TEI12
36.101	3228	-	Rel-9	F	RP-152130	R4-155955	approved	Correction to reference channel for CQI requirements	9.22.0	9.23.0	R4	LTE-RF
36.101	3229	-	Rel-10	A	RP-152130	R4-155956	approved	Correction to reference channel for CQI requirements	10.20.0	10.21.0	R4	LTE-RF
36.101	3230	-	Rel-11	A	RP-152130	R4-155957	approved	Correction to reference channel for CQI requirements	11.14.0	11.15.0	R4	LTE-RF
36.101	3231	-	Rel-12	A	RP-152130	R4-155958	approved	Correction to reference channel for CQI requirements	12.9.0	12.10.0	R4	LTE-RF
36.101	3232	-	Rel-13	A	RP-152130	R4-155959	approved	Correction to reference channel for CQI requirements	13.1.0	13.2.0	R4	LTE-RF
36.101	3233	1	Rel-13	B	RP-152168	R4-156784	approved	CR 36.101 BW combination for CA_8B	13.1.0	13.2.0	R4	LTE_CA_C_B8-Core
36.101	3241	-	Rel-13	F	RP-152164	R4-156123	approved	Correction to mandatory 2UL support for 3DL interband CA	13.1.0	13.2.0	R4	LTE_CA_3DL_2UL-Core
36.101	3242	-	Rel-13	B	RP-152164	R4-156130	approved	Introduction of 2 UL and 3 DL interband cases with MSD	13.1.0	13.2.0	R4	LTE_CA_3DL_2UL-Core
36.101	3243	-	Rel-12	F	RP-152164	R4-156139	approved	Introduction of 2 UL and 3 DL interband cases with MSD	12.9.0	12.10.0	R4	LTE_CA_3DL_2UL-Core
36.101	3244	1	Rel-11	F	RP-152132	R4-156688	approved	CR on FRC for CDM-multiplexed DM RS	11.14.0	11.15.0	R4	TEI11
36.101	3245	-	Rel-12	A	RP-152132	R4-156143	approved	CR on FRC for CDM-multiplexed DM RS	12.9.0	12.10.0	R4	TEI11
36.101	3246	-	Rel-13	A	RP-152132	R4-156144	approved	CR on FRC for CDM-multiplexed DM RS	13.1.0	13.2.0	R4	TEI11
36.101	3247	-	Rel-11	F	RP-152132	R4-156183	approved	Correction to physical channel for CQI reporting in type A test case	11.14.0	11.15.0	R4	LTE_Interf_Rej-Perf
36.101	3248	-	Rel-12	A	RP-152132	R4-156184	approved	Correction to physical channel for CQI reporting in type A test case	12.9.0	12.10.0	R4	LTE_Interf_Rej-Perf
36.101	3249	-	Rel-13	A	RP-152132	R4-156203	approved	Correction to physical channel for CQI reporting in type A test case	13.1.0	13.2.0	R4	LTE_Interf_Rej-Perf
36.101	3255	-	Rel-13	A	RP-152133	R4-156370	approved	CR for Rel-12 NAICS - Demodulation Test	13.1.0	13.2.0	R4	LTE_NAICS-Perf

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36.101	3260	-	Rel-12	F	RP-152133	R4-156375	approved	CR for Rel-12 NAICS - Demodulation Test	12.9.0	12.10.0	R4	LTE_NAICS-Perf
36.101	3262	-	Rel-12	F	RP-152133	R4-156392	approved	Correction on CA_4A-4A-5A table reference	12.9.0	12.10.0	R4	LTE_CA_B4_B4_B5-Core
36.101	3263	-	Rel-13	A	RP-152133	R4-156393	approved	Correction on CA_4A-4A-5A table reference	13.1.0	13.2.0	R4	LTE_CA_B4_B4_B5-Core
36.101	3266	1	Rel-10	F	RP-152131	R4-156712	approved	Clarification of Pcell support in 36.101 Rel-11 in CA scenarios	10.20.0	10.21.0	R4	TEI10
36.101	3267	1	Rel-11	F	RP-152132	R4-156713	approved	Clarification of Pcell support in 36.101 Rel-11 in CA scenarios	11.14.0	11.15.0	R4	TEI11
36.101	3268	-	Rel-12	F	RP-152136	R4-156430	approved	Clarification of Pcell support in 36.101 in CA scenarios	12.9.0	12.10.0	R4	TEI12
36.101	3269	1	Rel-13	F	RP-152134	R4-156715	approved	Clarification of Pcell support in 36.101 in CA scenarios	13.1.0	13.2.0	R4	TEI13
36.101	3271	1	Rel-11	F	RP-152132	R4-156902	approved	A-MPR correction for CA_NS_06 CA-7C non-contiguous RB allocation	11.14.0	11.15.0	R4	LTE_CA_B7-Core
36.101	3272	-	Rel-12	A	RP-152132	R4-156437	approved	A-MPR correction for CA_NS_06 CA-7C non-contiguous RB allocation	12.9.0	12.10.0	R4	LTE_CA_B7-Core
36.101	3273	-	Rel-13	A	RP-152132	R4-156438	approved	A-MPR correction for CA_NS_06 CA-7C non-contiguous RB allocation	13.1.0	13.2.0	R4	LTE_CA_B7-Core
36.101	3275	1	Rel-12	F	RP-152136	R4-156733	approved	Clarification on relative power tolereance for CA	12.9.0	12.10.0	R4	TEI12
36.101	3276	-	Rel-13	A	RP-152136	R4-156477	approved	Clarification on relative power tolereance for CA	13.1.0	13.2.0	R4	TEI12
36.101	3278	-	Rel-13	A	RP-152133	R4-156510	approved	Correction of uplink configuration for CA_18-28	13.1.0	13.2.0	R4	LTE_CA_B18_B28-Core
36.101	3279	-	Rel-12	F	RP-152133	R4-156511	approved	Correction of uplink configuration for CA_18-28	12.9.0	12.10.0	R4	LTE_CA_B18_B28-Core
36.101	3280	-	Rel-13	F	RP-152135	R4-156610	approved	CR on corrections for ProSe Direct Discovery demodulation requirements	13.1.0	13.2.0	R4	LTE_D2D_Prox-Perf
36.101	3281	-	Rel-13	F	RP-152135	R4-156611	approved	CR to finalize demodulation performance requirements for D2D Communication	13.1.0	13.2.0	R4	LTE_D2D_Prox-Perf
36.101	3282	-	Rel-10	F	RP-152131	R4-156953	approved	Missing RB allocation and OCNG Pattern for Cat 1 UEs in Multiple PMI CSI Reference Symbol tests	10.20.0	10.21.0	R4	TEI10
36.101	3283	-	Rel-11	A	RP-152131	R4-156954	approved	Missing RB allocation and OCNG Pattern for Cat 1 UEs in Multiple PMI CSI Reference Symbol tests	11.14.0	11.15.0	R4	TEI10
36.101	3284	-	Rel-12	A	RP-152131	R4-156957	approved	Missing RB allocation and OCNG Pattern for Cat 1 UEs in Multiple PMI CSI Reference Symbol tests	12.9.0	12.10.0	R4	TEI10
36.101	3285	-	Rel-13	A	RP-152131	R4-156959	approved	Missing RB allocation and OCNG Pattern for Cat 1 UEs in Multiple PMI CSI Reference Symbol tests	13.1.0	13.2.0	R4	TEI10
36.101	3286	1	Rel-13	B	RP-152167	R4-158254	approved	Introduction of CA_5B to TS 36.101	13.1.0	13.2.0	R4	LTE_CA_C_B5-Core
36.101	3287	-	Rel-13	B	RP-152169	R4-156971	approved	Introduction of CA_5A-5A to TS 36.101	13.1.0	13.2.0	R4	LTE_CA_NC_B5-Core
36.101	3288	-	Rel-13	B	RP-152133	R4-157045	approved	Introduction of dual uplink CA into 36.101	13.1.0	13.2.0	R4	LTE_CA_2UL-A1-Core
36.101	3291	1	Rel-13	B	RP-152150	R4-158364	approved	CR on eD2D RF core requirements	13.1.0	13.2.0	R4	LTE_eD2D_Prox-Core
36.101	3292	3	Rel-13	B	RP-152171	R4-158423	approved	Introduction of B65 in Region 1	13.1.0	13.2.0	R4	LTE_1980_2170_REG1-Core
36.101	3293	1	Rel-12	F	RP-152131	R4-158228	approved	Correction of supported sub-block frequency arrangement for CA_41-41	12.9.0	12.10.0	R4	LTE_CA-Core
36.101	3294	-	Rel-13	A	RP-152131	R4-157140	approved	Correction of supported sub-block frequency arrangement for CA_41-41	13.1.0	13.2.0	R4	LTE_CA-Core
36.101	3295	-	Rel-12	F	RP-152131	R4-157141	approved	Correction of test configuration for combinations of inter-band and intra-band CA	12.9.0	12.10.0	R4	LTE_CA-Core

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36.101	3296	-	Rel-13	A	RP-152131	R4-157142	approved	Correction of test configuration for combinations of inter-band and intra-band CA	13.1.0	13.2.0	R4	LTE_CA-Core
36.101	3299	2	Rel-13	B	RP-152147	R4-158442	approved	RF receiver requirements for UE(s) supporting four antenna ports	13.1.0	13.2.0	R4	LTE_4Rx_AP_DL-Core
36.101	3300	2	Rel-13	B	RP-152148	R4-158443	approved	Introduction of RF requirements for LAA operation	13.1.0	13.2.0	R4	LTE_LAA-Core
36.101	3309	2	Rel-13	B	RP-152172	R4-158432	approved	Introduction of Band 66	13.1.0	13.2.0	R4	LTE_AWS_EXT-Core
36.101	3310	-	Rel-12	F	RP-152136	R4-157226	approved	Correction on CQI test 1A for TDD eIMTA	12.9.0	12.10.0	R4	TEI12
36.101	3311	-	Rel-13	A	RP-152136	R4-157227	approved	Correction on CQI test 1A for TDD eIMTA	13.1.0	13.2.0	R4	TEI12
36.101	3312	1	Rel-13	B	RP-152166	R4-158317	approved	Introduction of 3DL/3UL Inter-band CA of CA_39A-41C and CA_39C-41A	13.1.0	13.2.0	R4	LTE_CA_3DL3UL_B39_B41_B41-Core; LTE_CA_3DL3UL_B39_B39_B41-Core
36.101	3313	-	Rel-12	F	RP-152133	R4-157250	approved	Correction of the resource allocation in FRC for CAT0 UE demodulation tests	12.9.0	12.10.0	R4	LC_MTC_LTE-Perf
36.101	3314	-	Rel-13	A	RP-152133	R4-157251	approved	Correction of the resource allocation in FRC for CAT0 UE demodulation tests	13.1.0	13.2.0	R4	LC_MTC_LTE-Perf
36.101	3318	-	Rel-13	B	RP-152151	R4-157303	approved	Introduce TM4 performance requirements when CRS assistance information is provided	13.1.0	13.2.0	R4	LTE_CRSIM-Perf
36.101	3319	1	Rel-13	B	RP-152151	R4-158107	approved	Introduce TM10 performance requirements when CRS assistance information is provided for multiple-CSI-process capable UE	13.1.0	13.2.0	R4	LTE_CRSIM-Perf
36.101	3320	1	Rel-13	B	RP-152151	R4-158108	approved	Introduce TM10 performance requirements when CRS assistance information is provided for one-CSI-process capable UE	13.1.0	13.2.0	R4	LTE_CRSIM-Perf
36.101	3325	-	Rel-13	B	RP-152163	R4-157346	approved	Introduction of 5DL/1UL CA combinations into TS 36.101	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B19_B42_B42-Core, LTE_CA_B1_B19_B21_B42_B42-Core
36.101	3326	1	Rel-13	B	RP-152175	R4-158250	approved	Introduction of Region 3 requirement in Band 65	13.1.0	13.2.0	R4	LTE_1980_2170_REG3-Core
36.101	3327	-	Rel-13	F	RP-152138	R4-157361	approved	Correction of CA_8A-41C bandwidth combination set	13.1.0	13.2.0	R4	LTE_CA_B8_B41_B41
36.101	3328	1	Rel-12	F	RP-152133	R4-158235	approved	Removal of DC channel bandwidth combination set table	12.9.0	12.10.0	R4	LTE_SC_enh_dualC-Core
36.101	3329	-	Rel-13	A	RP-152133	R4-157363	approved	Removal of DC channel bandwidth combination set table	13.1.0	13.2.0	R4	LTE_SC_enh_dualC-Core
36.101	3330	-	Rel-12	F	RP-152136	R4-157386	approved	CR on demodulation requirements of Dual Connectivity	12.9.0	12.10.0	R4	TEI12
36.101	3331	-	Rel-13	A	RP-152136	R4-157388	approved	CR on demodulation requirements of Dual Connectivity	13.1.0	13.2.0	R4	TEI12
36.101	3332	1	Rel-13	F	RP-152131	R4-158414	approved	Modification and correction of CA_3A-3A BCS1 in Rel.13 36.101	13.1.0	13.2.0	R4	LTE_CA-Core
36.101	3333	-	Rel-12	F	RP-152133	R4-157407	approved	Correction of MSD levels for 2UL inter-band CA in TS 36.101 Rel-12	12.9.0	12.10.0	R4	LTE_CA_2UL-A4-Core
36.101	3334	-	Rel-13	F	RP-152133	R4-157408	approved	Correction of MSD levels for 2UL inter-band CA in TS 36.101 Rel-13	13.1.0	13.2.0	R4	LTE_CA_2UL-A4-Core

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36.101	3338	-	Rel-13	B	RP-152162	R4-157426	approved	Introduction of finished 4DL inter-band CAs to TS 36.101	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B7_B8-Core,LTE_CA_B2_B2_B4_B5-Core,LTE_CA_B2_B2_B5_B12-Core,LTE_CA_B2_B2_B12_B12-Core,LTE_CA_B2_B4_B4_B5-Core,LTE_CA_B2_B4_B5_B12-Core,LTE_CA_B2_B5_B12_B12-Core,LTE_CA_B3_B7_B7_B28-Core,LTE_CA_B3_B28_B40_B40-Core,LTE_CA_B4_B4_B5_B12-Core,LTE_
36.101	3339	-	Rel-13	B	RP-152170	R4-157432	approved	Introduction of CA_7A-7A BCS1 to TS 36.101	13.1.0	13.2.0	R4	LTE_CA_NC_B7_BWset-Core
36.101	3340	1	Rel-13	B	RP-152164	R4-158263	approved	Introduction of additional 2 UL and 3 DL interband cases with MSD	13.1.0	13.2.0	R4	LTE_CA_3DL_2UL-Core
36.101	3341	1	Rel-13	F	RP-152158	R4-158258	approved	Addition of Class E into CA BW Class table.	13.1.0	13.2.0	R4	LTE_CA_C_B42_4DL-Core
36.101	3343	-	Rel-13	F	RP-152131	R4-157475	approved	Table 6.2.4A-1 note 1 correction	13.1.0	13.2.0	R4	LTE_CA-Core
36.101	3344	-	Rel-12	F	RP-152164	R4-157486	approved	Removal of (NOTE 4) from Table 5.6A.1-2a	12.9.0	12.10.0	R4	LTE_CA_3DL_2UL-Core
36.101	3345	-	Rel-13	A	RP-152164	R4-157487	approved	Removal of (NOTE 4) from Table 5.6A.1-2a	13.1.0	13.2.0	R4	LTE_CA_3DL_2UL-Core
36.101	3347	-	Rel-13	B	RP-152160	R4-157589	approved	Introduction of 4DL NC CA in band42 in 36.101	13.1.0	13.2.0	R4	LTE_CA_NC_B42_4DL-Core
36.101	3348	-	Rel-13	B	RP-152173	R4-157591	approved	Introduction of 1447-1467MHz Band into 36.101	13.1.0	13.2.0	R4	LTE_TDD_1447MHz_China-Core
36.101	3351	-	Rel-12	F	RP-152136	R4-157709	approved	CR: PDSCH ETU600 performance requirements	12.9.0	12.10.0	R4	TEI12
36.101	3352	-	Rel-13	A	RP-152136	R4-157710	approved	CR: PDSCH ETU600 performance requirements	13.1.0	13.2.0	R4	TEI12
36.101	3357	-	Rel-13	B	RP-152156	R4-157768	approved	Introduction of additional band combinations for 2DL inter-band CA	13.1.0	13.2.0	R4	LTE_CA_B1_B40-Core, LTE_CA_B3_B41-Core, LTE_CA_B5_B38-Core, LTE_CA_B20_B40-Core
36.101	3358	1	Rel-13	B	RP-152176	R4-158446	revised	Introduction of additional band combinations for 3DL inter-band CA	13.1.0		R4	LTE_CA_B1_B3_B7-Core,LTE_CA_B1_B3_B40-Core,LTE_CA_B1_B8_B40-Core,LTE_CA_B1_B11_B18-Core,LTE_CA_B3_B7_B38-Core,LTE_CA_B3_B8_B40-Core,LTE_CA_B3_B41_B41-Core,LTE_CA_B3_B41_B42-Core,LTE_CA_B4_B4_B7_BWset-Core,LTE_CA_B4_B7_B12_BWset-Core,LTE_CA_B5_B40_B40-Core

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.101	3358	2	Rel-13	B	RP-151972	-	approved	Revision of the RAN4 approved R4-158446 (big CR 3DL 36.101)	13.1.0	13.2.0	R4	LTE_CA_B1_B8_B40-Core,LTE_CA_B3_B8_B40-Core,LTE_CA_B28_B40_B40-Core,LTE_CA_B1_B3_B7-Core,LTE_CA_B4_B4_B7_BWset-Core,LTE_CA_B4_B7_B12_BWset-Core,LTE_CA_B7_B20_B38-Core,LTE_CA_B7_B42_B42-Core,LTE_CA_B3_B7_B38-Core,LTE_CA_B28_B41_B41-Core,LTE_CA_B28_B42
36.101	3359	1	Rel-13	B	RP-152147	R4-158099	approved	Introduction of the Medium Correlation A model	13.1.0	13.2.0	R4	LTE_4Rx_AP_DL-Perf
36.101	3360	1	Rel-13	B	RP-152147	R4-158100	approved	Requirements for ePDCCH with 4Rx	13.1.0	13.2.0	R4	LTE_4Rx_AP_DL-Perf
36.101	3361	1	Rel-13	B	RP-152147	R4-158101	approved	Requirements for PDCCH with 4Rx	13.1.0	13.2.0	R4	LTE_4Rx_AP_DL-Perf
36.101	3362	1	Rel-13	B	RP-152147	R4-158102	approved	Requirements for PDSCH with 4Rx	13.1.0	13.2.0	R4	LTE_4Rx_AP_DL-Perf
36.101	3363	1	Rel-13	B	RP-152147	R4-158103	approved	Requirements for PHICH with 4Rx	13.1.0	13.2.0	R4	LTE_4Rx_AP_DL-Perf
36.101	3367	1	Rel-13	B	RP-152159	R4-158261	approved	Introduction of intra-band non-contiguous CA in Band 41 for 4DL	13.1.0	13.2.0	R4	LTE_CA_NC_B41_4DL-Core
36.101	3368	-	Rel-13	B	RP-152165	R4-157873	approved	Addition of 2 UL and 3 DL mixed intra/inter band carrier aggregation combinations without MSD.	13.1.0	13.2.0	R4	LTE_CA_3DL_2UL_inter_intra-Core
36.101	3372	1	Rel-13	F	RP-152133	R4-158223	approved	Revision to CR 3256	13.1.0	13.2.0	R4	LTE_CA_NC_B41_3DL
36.101	3374	1	Rel-12	F	RP-152133	R4-158233	approved	Correction to Pcmax for CA to include delta_T_ProSe	12.9.0	12.10.0	R4	LTE_D2D_Prox-Core
36.101	3375	-	Rel-13	A	RP-152133	R4-158055	approved	Correction to Pcmax for CA to include delta_T_ProSe	13.1.0	13.2.0	R4	LTE_D2D_Prox-Core
36.101	3376	-	Rel-13	F	RP-152162	R4-158083	approved	Delta TIB,c and Delta RIB,c for 1UL/4DL	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B19_B42-Core, LTE_CA_B1_B19_B21_B42-Core, LTE_CA_B2_B4_B5_B29-Core, LTE_CA_B2_B4_B5_B30-Core, LTE_CA_B2_B4_B12_B30-Core, LTE_CA_B2_B4_B29_B30-Core
36.101	3377	-	Rel-12	F	RP-152136	R4-158304	approved	NS_05 modification for PHS protection in Japan	12.9.0	12.10.0	R4	TEI12
36.101	3378	-	Rel-13	A	RP-152136	R4-158368	approved	NS_05 modification for PHS protection in Japan	13.1.0	13.2.0	R4	TEI12
36.104	0686	-	Rel-13	B	RP-152168	R4-155981	approved	Introduction of intra-band CA_8B to TS 36.104	13.1.0	13.2.0	R4	LTE_CA_C_B8-Core
36.104	0700	-	Rel-13	B	RP-152171	R4-156416	approved	Introduction of E-UTRA band 65 to TS36.104	13.1.0	13.2.0	R4	LTE_1980_2170_REG1-Core
36.104	0701	1	Rel-11	F	RP-152132	R4-156723	approved	Clarification on the transmitter intermodulation requirement in TS36.104	11.13.0	11.14.0	R4	TEI11
36.104	0702	-	Rel-12	A	RP-152132	R4-156547	approved	Clarification on the transmitter intermodulation requirement in TS36.104	12.9.0	12.10.0	R4	TEI11
36.104	0703	-	Rel-13	A	RP-152132	R4-156548	approved	Clarification on the transmitter intermodulation requirement in TS36.104	13.1.0	13.2.0	R4	TEI11
36.104	0705	1	Rel-13	B	RP-152157	R4-156890	approved	Introduction of Band 67 and CA_20-67 to 36.104	13.1.0	13.2.0	R4	LTE_CA_700EU_B20-Core

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.104	0708	-	Rel-13	B	RP-152167	R4-156968	approved	Introduction of CA_5B to TS 36.104	13.1.0	13.2.0	R4	LTE_CA_C_B5-Core
36.104	0709	-	Rel-13	B	RP-152169	R4-156972	approved	Introduction of intra-band NC CA_5A-5A to TS 36.104	13.1.0	13.2.0	R4	LTE_CA_NC_B5-Core
36.104	0711	-	Rel-13	B	RP-152173	R4-157592	approved	Introduction of 1447-1467MHz Band into 36.104	13.1.0	13.2.0	R4	LTE_TDD_1447MHz_China-Core
36.104	0712	1	Rel-11	F	RP-152132	R4-158229	approved	Correction on UEM requirement for MB-MSR	11.13.0	11.14.0	R4	MB_MSR_RF
36.104	0713	-	Rel-12	A	RP-152132	R4-157622	approved	Correction on UEM requirement for MB-MSR	12.9.0	12.10.0	R4	MB_MSR_RF
36.104	0714	-	Rel-13	A	RP-152132	R4-157623	approved	Correction on UEM requirement for MB-MSR	13.1.0	13.2.0	R4	MB_MSR_RF
36.104	0715	2	Rel-13	B	RP-152148	R4-158444	approved	Introduction of LAA in TS 36.104	13.1.0	13.2.0	R4	LTE_LAA-Core
36.104	0716	1	Rel-11	F	RP-152132	R4-158315	approved	BS Spec improvements: TS 36.104 Corrections	11.13.0	11.14.0	R4	TEI11
36.104	0717	-	Rel-12	A	RP-152132	R4-157747	approved	BS Spec improvements: TS 36.104 Corrections	12.9.0	12.10.0	R4	TEI11
36.104	0718	-	Rel-13	A	RP-152132	R4-157748	approved	BS Spec improvements: TS 36.104 Corrections	13.1.0	13.2.0	R4	TEI11
36.104	0719	-	Rel-11	F	RP-152132	R4-157845	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	11.13.0	11.14.0	R4	LTE_CA_enh-Core
36.104	0720	-	Rel-12	A	RP-152132	R4-157846	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	12.9.0	12.10.0	R4	LTE_CA_enh-Core
36.104	0721	-	Rel-13	A	RP-152132	R4-157847	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	13.1.0	13.2.0	R4	LTE_CA_enh-Core
36.104	0729	-	Rel-13	B	RP-152172	R4-158002	approved	Introduction of Band 66 to 36.104	13.1.0	13.2.0	R4	LTE_AWS_EXT-Core
36.104	0731	-	Rel-13	B	RP-152156	R4-158004	approved	Introduction of 2DL CA combinations	13.1.0	13.2.0	R4	LTE_CA_B3_B41-Core, LTE_CA_B20_B40-Core, LTE_CA_B5_B38-Core
36.104	0732	-	Rel-13	B	RP-152161	R4-158006	approved	Introduction of 3DL CA combinations	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B7-Core,LTE_CA_B1_B11_B18-Core,LTE_CA_B28_B40_B40-Core,LTE_CA_B7_B42_B42-Core,LTE_CA_B28_B41_B41-Core,LTE_CA_B28_B42_B42-Core,LTE_CA_B3_B41_B42-Core,LTE_CA_B1_B3_B40-Core,LTE_CA_B1_B8_B40-Core,LTE_CA_B3_B7_B38-Core,LTE_CA_B7_B20_B38-Core
36.104	0733	-	Rel-13	B	RP-152162	R4-158008	approved	Introduction of 4DL CA combinations	13.1.0	13.2.0	R4	LTE_CA_B2_B2_B4_B5-Core, LTE_CA_B2_B2_B5_B12-Core, LTE_CA_B2_B4_B5_B12-Core, LTE_CA_B4_B4_B5_B12-Core, LTE_CA_B2_B4_B4_B5-Core, LTE_CA_B1_B3_B7_B8-Core, LTE_CA_B3_B28_B40_B40-Core, LTE_CA_B1_B3_B8_B40-Core, LTE_CA_B1_B3_B5_B40-Core

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.113	0051	-	Rel-13	B	RP-152172	R4-156091	approved	Introduction of Band 66	12.3.0	13.0.0	R4	LTE_AWS_EXT-Core
36.113	0052	-	Rel-13	B	RP-152157	R4-156099	approved	Introduction of Band 67	12.3.0	13.0.0	R4	LTE_CA_700EU_B20-Core
36.113	0053	-	Rel-13	B	RP-152171	R4-156417	approved	Introduction of Band 65 to TS 36.113	12.3.0	13.0.0	R4	LTE_1980_2170_REG1-Core
36.113	0054	-	Rel-13	B	RP-152173	R4-157593	approved	Introduction of 1447-1467MHz Band into 36.113	12.3.0	13.0.0	R4	LTE_TDD_1447MHz_China-Core
36.116	0018	-	Rel-11	F	RP-152132	R4-155944	approved	Removal of square brackets in TS36.116	11.6.0	11.7.0	R4	LTE_Relay2-Core
36.116	0019	-	Rel-12	A	RP-152132	R4-155945	approved	Removal of square brackets in TS36.116	12.3.0	12.4.0	R4	LTE_Relay2-Core
36.117	0016	-	Rel-11	F	RP-152132	R4-157869	approved	Some corrections for TS36.117	11.3.0	11.4.0	R4	LTE_Relay2-Perf
36.117	0017	-	Rel-12	A	RP-152132	R4-157870	approved	Some corrections for TS36.117	12.2.0	12.3.0	R4	LTE_Relay2-Perf
36.124	0028	-	Rel-13	B	RP-152172	R4-156092	approved	Introduction of Band 66	12.1.0	13.0.0	R4	LTE_AWS_EXT-Core
36.124	0029	-	Rel-13	B	RP-152157	R4-156100	approved	Introduction of Band 67	12.1.0	13.0.0	R4	LTE_CA_700EU_B20-Core
36.124	0030	-	Rel-13	B	RP-152171	R4-157352	approved	Introduction of Band 65 in TS 36.124	12.1.0	13.0.0	R4	LTE_1980_2170_REG1-Perf
36.124	0031	-	Rel-13	B	RP-152173	R4-157594	approved	Introduction of 1447-1467MHz Band into 36.124	12.1.0	13.0.0	R4	LTE_TDD_1447MHz_China-Core
36.133	3082	-	Rel-12	F	RP-152135	R4-155545	approved	CR on editorial cleanup for D2D RRM requirements	12.9.0	12.10.0	R4	LTE_D2D_Prox-Perf
36.133	3083	-	Rel-10	F	RP-152131	R4-155565	approved	Correction of RSRQ value in RRM Serving Cell Test cases A.9.9.1, A.9.9.2	10.20.0	10.21.0	R4	LTE-RF
36.133	3084	-	Rel-11	A	RP-152131	R4-155566	approved	Correction of RSRQ value in RRM Serving Cell Test cases A.9.9.1, A.9.9.2	11.14.0	11.15.0	R4	LTE-RF
36.133	3085	-	Rel-12	A	RP-152131	R4-155567	approved	Correction of RSRQ value in RRM Serving Cell Test cases A.9.9.1, A.9.9.2	12.9.0	12.10.0	R4	LTE-RF
36.133	3086	-	Rel-13	A	RP-152131	R4-155568	approved	Correction of RSRQ value in RRM Serving Cell Test cases A.9.9.1, A.9.9.2	13.1.0	13.2.0	R4	LTE-RF
36.133	3087	-	Rel-12	F	RP-152136	R4-155776	approved	Remove brackets in RSTD measurement accuracy R12	12.9.0	12.10.0	R4	TEI12
36.133	3088	-	Rel-13	A	RP-152136	R4-155777	approved	Remove brackets in RSTD measurement accuracy R13	13.1.0	13.2.0	R4	TEI12
36.133	3089	-	Rel-12	F	RP-152133	R4-155779	approved	Remove bracket for CSI-RSRP measurement R12	12.9.0	12.10.0	R4	LTE_SC_enh_L1-Perf
36.133	3090	-	Rel-13	A	RP-152133	R4-155780	approved	Remove bracket for CSI-RSRP measurement R13	13.1.0	13.2.0	R4	LTE_SC_enh_L1-Perf
36.133	3093	1	Rel-12	F	RP-152133	R4-156675	approved	Correction to E-UTRAN TDD-FDD CA Event Triggered Reporting Under Deactivated SCell in Non-DRX with PCell in FDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3094	-	Rel-13	A	RP-152133	R4-155802	approved	Correction to E-UTRAN TDD-FDD CA Event Triggered Reporting Under Deactivated SCell in Non-DRX with PCell in FDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3095	1	Rel-12	F	RP-152133	R4-156676	approved	Correction to E-UTRAN TDD-FDD CA Event Triggered Reporting Under Deactivated SCell in Non-DRX with PCell in TDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3096	-	Rel-13	A	RP-152133	R4-155804	approved	Correction to E-UTRAN TDD-FDD CA Event Triggered Reporting Under Deactivated SCell in Non-DRX with PCell in TDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3097	1	Rel-12	F	RP-152133	R4-156677	approved	Correction to E-UTRAN TDD-FDD CA Event triggered reporting on deactivated SCell with PCell interruption in non-DRX with PCell in FDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3098	-	Rel-13	A	RP-152133	R4-155806	approved	Correction to E-UTRAN TDD-FDD CA Event triggered reporting on deactivated SCell with PCell interruption in non-DRX with PCell in FDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3099	1	Rel-12	F	RP-152133	R4-156678	approved	Correction to E-UTRAN TDD-FDD CA Event triggered reporting on deactivated SCell with PCell interruption in non-DRX with PCell in TDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3100	-	Rel-13	A	RP-152133	R4-155808	approved	Correction to E-UTRAN TDD-FDD CA Event triggered reporting on deactivated SCell with PCell interruption in non-DRX with PCell in TDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3101	1	Rel-12	F	RP-152133	R4-156679	approved	Correction to RSRP for E-UTRAN TDD-FDD Carrier Aggregation with PCell in FDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3102	-	Rel-13	A	RP-152133	R4-155810	approved	Correction to RSRP for E-UTRAN TDD-FDD Carrier Aggregation with PCell in FDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3103	1	Rel-12	F	RP-152133	R4-156680	approved	Correction to RSRP for E-UTRAN TDD-FDD Carrier Aggregation with PCell in TDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3104	-	Rel-13	A	RP-152133	R4-155812	approved	Correction to RSRP for E-UTRAN TDD-FDD Carrier Aggregation with PCell in TDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3105	1	Rel-12	F	RP-152133	R4-156681	approved	Correction to RSRQ for E-UTRAN TDD-FDD Carrier Aggregation with PCell in FDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3106	-	Rel-13	A	RP-152133	R4-155814	approved	Correction to RSRQ for E-UTRAN TDD-FDD Carrier Aggregation with PCell in FDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3107	1	Rel-12	F	RP-152133	R4-156682	approved	Correction to RSRQ for E-UTRAN TDD-FDD Carrier Aggregation with PCell in TDD R12	12.9.0	12.10.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3108	-	Rel-13	A	RP-152133	R4-155816	approved	Correction to RSRQ for E-UTRAN TDD-FDD Carrier Aggregation with PCell in TDD R13	13.1.0	13.2.0	R4	LTE_CA_TDD_FDD-Perf
36.133	3113	-	Rel-12	F	RP-152136	R4-155845	approved	Alignment of UE reporting criteria requirements	12.9.0	12.10.0	R4	TEI12
36.133	3114	-	Rel-13	A	RP-152136	R4-155846	approved	Alignment of UE reporting criteria requirements	13.1.0	13.2.0	R4	TEI12
36.133	3115	-	Rel-12	F	RP-152131	R4-155925	approved	Removal of square brackets for some CA requirements	12.9.0	12.10.0	R4	LTE_CA
36.133	3116	-	Rel-13	F	RP-152131	R4-155926	approved	Removal of square brackets for some CA requirements	13.1.0	13.2.0	R4	LTE_CA
36.133	3117	-	Rel-12	F	RP-152133	R4-155960	approved	Cleanup of 3DL CA RRM Test cases	12.9.0	12.10.0	R4	LTE_CA_B1_B3_B5-Perf
36.133	3118	-	Rel-13	A	RP-152133	R4-155961	approved	Cleanup of 3DL CA RRM Test cases	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B5-Perf
36.133	3119	1	Rel-11	A	RP-152131	R4-156878	approved	Correction of definition of antenna connection in some RSTD tests	11.14.0	11.15.0	R4	TEI10
36.133	3120	-	Rel-12	A	RP-152131	R4-156030	approved	Correction of definition of antenna connection in some RSTD tests	12.9.0	12.10.0	R4	TEI10
36.133	3121	-	Rel-13	F	RP-152134	R4-156031	approved	Correction of definition of antenna connection in some RSTD tests	13.1.0	13.2.0	R4	TEI13
36.133	3128	1	Rel-12	F	RP-152133	R4-156697	approved	Different TDD configurations for OTDOA in CA in release 12	12.9.0	12.10.0	R4	LTE_CA-Core, LTE_CA_B39_B41-Core

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3129	-	Rel-13	A	RP-152133	R4-156041	approved	Different TDD configurations for OTDOA in CA in release 12	13.1.0	13.2.0	R4	LTE_CA-Core, LTE_CA_B39_B41-Core
36.133	3131	-	Rel-13	B	RP-152157	R4-156101	approved	Introduction of Band 67	13.1.0	13.2.0	R4	LTE_CA_700EU_B20-Core
36.133	3134	-	Rel-12	F	RP-152133	R4-156156	approved	Correction of definition of pTAG and psTAG	12.9.0	12.10.0	R4	LTE_SC_enh_dualC-Perf
36.133	3136	-	Rel-13	A	RP-152133	R4-156158	approved	Correction of definition of pTAG and psTAG	13.1.0	13.2.0	R4	LTE_SC_enh_dualC-Perf
36.133	3145	-	Rel-13	A	RP-152133	R4-156208	approved	Title of new section A.7.4 in TS36.133 for Rel-13	13.1.0	13.2.0	R4	LTE_SC_enh_dualC-Perf
36.133	3146	-	Rel-13	A	RP-152133	R4-156209	approved	SNR levels and Reference channels for DC RLM test cases for Rel-13	13.1.0	13.2.0	R4	LTE_SC_enh_dualC-Perf, TEI12
36.133	3147	-	Rel-10	F	RP-152131	R4-156210	approved	Correction on measurement category for reporting criteria	10.20.0	10.21.0	R4	LTE-RF, TEI10
36.133	3148	-	Rel-11	A	RP-152131	R4-156211	approved	Correction on measurement category for reporting criteria	11.14.0	11.15.0	R4	LTE-RF, TEI10
36.133	3149	-	Rel-12	A	RP-152131	R4-156212	approved	Correction on measurement category for reporting criteria	12.9.0	12.10.0	R4	LTE-RF, TEI10
36.133	3150	-	Rel-13	A	RP-152131	R4-156213	approved	Correction on measurement category for reporting criteria	13.1.0	13.2.0	R4	LTE-RF, TEI10
36.133	3156	-	Rel-10	F	RP-152133	R4-156220	approved	Alignment of dB values for 2DL CA activation and deactivation Test cases	10.20.0	10.21.0	R4	LTE_CA_B1_B3-Perf
36.133	3161	-	Rel-11	A	RP-152133	R4-156225	approved	Alignment of dB values for 2DL CA activation and deactivation Test cases	11.14.0	11.15.0	R4	LTE_CA_B1_B3-Perf
36.133	3164	-	Rel-12	A	RP-152133	R4-156228	approved	Alignment of dB values for 2DL CA activation and deactivation Test cases	12.9.0	12.10.0	R4	LTE_CA_B1_B3-Perf
36.133	3167	-	Rel-13	A	RP-152133	R4-156231	approved	Alignment of dB values for 2DL CA activation and deactivation Test cases	13.1.0	13.2.0	R4	LTE_CA_B1_B3-Perf
36.133	3173	-	Rel-13	F	RP-152135	R4-156607	approved	CR on editorial cleanup for D2D RRM requirements	13.1.0	13.2.0	R4	LTE_D2D_Prox-Perf
36.133	3174	-	Rel-10	F	RP-152131	R4-156879	approved	Correction of definition of antenna connection in some RSTD tests	10.20.0	10.21.0	R4	TEI10
36.133	3176	-	Rel-10	D	RP-152131	R4-156934	approved	Missing implementation from CR 2642 to Table A.8.12.2.1-1	10.20.0	10.21.0	R4	TEI10
36.133	3177	-	Rel-12	F	RP-152136	R4-156935	approved	Correction to Trstd values in 3DL RSTD Measurement Accuracy test cases	12.9.0	12.10.0	R4	TEI12
36.133	3178	-	Rel-13	A	RP-152136	R4-156936	approved	Correction to Trstd values in 3DL RSTD Measurement Accuracy test cases	13.1.0	13.2.0	R4	TEI12
36.133	3179	1	Rel-10	F	RP-152133	R4-158393	approved	Update of 2DL CA activation and deactivation of unknown SCell Test cases A.8.16.19+A.8.16.20	10.20.0	10.21.0	R4	LTE_CA_B1_B3-Perf
36.133	3180	-	Rel-11	A	RP-152133	R4-156940	approved	Update of 2DL CA activation and deactivation of unknown SCell Test cases A.8.16.19+A.8.16.20	11.14.1	11.15.0	R4	LTE_CA_B1_B3-Perf
36.133	3181	-	Rel-12	A	RP-152133	R4-156941	approved	Update of 2DL CA activation and deactivation of unknown SCell Test cases A.8.16.19+A.8.16.20	12.9.0	12.10.0	R4	LTE_CA_B1_B3-Perf
36.133	3183	-	Rel-13	A	RP-152133	R4-156943	approved	Update of 2DL CA activation and deactivation of unknown SCell Test cases A.8.16.19+A.8.16.20	13.1.0	13.2.0	R4	LTE_CA_B1_B3-Perf
36.133	3184	1	Rel-12	F	RP-152133	R4-158399	approved	Update of 3DL CA activation and deactivation of unknown SCell Test cases A.8.16.41+A.8.16.42	12.9.0	12.10.0	R4	LTE_CA_B1_B3_B5-Perf
36.133	3185	-	Rel-13	A	RP-152133	R4-156945	approved	Update of 3DL CA activation and deactivation of unknown SCell Test cases A.8.16.41+A.8.16.42	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B5-Perf

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3186	1	Rel-12	F	RP-152133	R4-158400	approved	Update to RRM test case for E-UTRAN TDD-FDD 3DL CA activation and deactivation of unknown SCell in non-DRX with PCell in FDD	12.9.0	12.10.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT
36.133	3187	-	Rel-13	A	RP-152133	R4-157031	approved	Update to RRM test case for E-UTRAN TDD-FDD 3DL CA activation and deactivation of unknown SCell in non-DRX with PCell in FDD	13.1.0	13.2.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT
36.133	3188	1	Rel-12	F	RP-152133	R4-158401	approved	Update to RRM test case for E-UTRAN TDD-FDD 3DL CA activation and deactivation of unknown SCell in non-DRX with PCell in TDD	12.9.0	12.10.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3189	-	Rel-13	A	RP-152133	R4-157033	approved	Update to RRM test case for E-UTRAN TDD-FDD 3DL CA activation and deactivation of unknown SCell in non-DRX with PCell in TDD	13.1.0	13.2.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT
36.133	3190	-	Rel-12	F	RP-152136	R4-157057	approved	Correction to Cells in OTDOA assistance data in 3DL RSTD Measurement Reporting Delay test cases	12.9.0	12.10.0	R4	TEI12
36.133	3191	-	Rel-13	A	RP-152136	R4-157058	approved	Correction to Cells in OTDOA assistance data in 3DL RSTD Measurement Reporting Delay test cases	13.1.0	13.2.0	R4	TEI12
36.133	3192	2	Rel-13	B	RP-152153	R4-158402	approved	CR on RS-SINR accuracy in 36.133	13.1.0	13.2.0	R4	LTE_MC_load-Core
36.133	3194	1	Rel-12	F	RP-152136	R4-158382	approved	Correction on RSRQ measurement report mapping R12	12.9.0	12.10.0	R4	TEI12
36.133	3195	1	Rel-13	A	RP-152136	R4-158386	approved	Correction on RSRQ measurement report mapping R13	13.1.0	13.2.0	R4	TEI12
36.133	3196	-	Rel-13	B	RP-152173	R4-157099	approved	Introduction of Band 45 into TS36.133	13.1.0	13.2.0	R4	LTE_TDD_1447MHz_China-Core
36.133	3209	-	Rel-10	F	RP-152131	R4-157195	approved	Further Correction of Cell Time offset in RSTD CA test cases (Rel-10)	10.20.0	10.21.0	R4	LTE_CA
36.133	3210	-	Rel-12	F	RP-152131	R4-157196	approved	Further Correction of Cell Time offset in RSTD CA test cases (Rel-12)	12.9.0	12.10.0	R4	LTE_CA
36.133	3211	-	Rel-13	A	RP-152131	R4-157197	approved	Further Correction of Cell Time offset in RSTD CA test cases (Rel-13)	13.1.0	13.2.0	R4	LTE_CA
36.133	3212	-	Rel-11	F	RP-152131	R4-157205	approved	Further Correction of Cell Time offset in RSTD CA test cases (Rel-11)	11.14.1	11.15.0	R4	LTE_CA
36.133	3213	1	Rel-13	B	RP-152155	R4-158373	approved	CR for clearification of band combination in 36133	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B19_B42_B42, LTE_CA_B1_B19_B21_B42_B42,LTE_CA_B1_B3_B7_B7_B28, LTE_CA_B3_B3_B7_B7_B28,LTE_CA_3DL3UL_B39_B41_B41,LTE_CA_3DL3UL_B39_B39_B41, LTE_CA_C_B42_4DL,LTE_CA_NC_B41_4DL,LTE_CA_B2_B2_B5_B30-Core,LTE_CA_B2_B2_B12_B30-Core,LTE_CA_B2_B2_B29_B30
36.133	3214	1	Rel-13	B	RP-152166	R4-158374	approved	CR for RRM requirement up to 3UL CA in 36133	13.1.0	13.2.0	R4	LTE_CA_3DL3UL_B39_B41_B41, LTE_CA_3DL3UL_B39_B39_B41

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3216	1	Rel-13	B	RP-152152	R4-158153	approved	CR on measurement performance requirements for UE reporting SSTD between MeNB and SeNB for dual connectivity enhancements	13.1.0	13.2.0	R4	LTE_dualC_enh-Core
36.133	3222	-	Rel-12	F	RP-152133	R4-157438	approved	Adding the title of A.8.22 in TS 36.133 R12	12.9.0	12.10.0	R4	LTE_SC_enh_L1-Perf
36.133	3223	-	Rel-13	A	RP-152133	R4-157439	approved	Adding the title of A.8.22 in TS 36.133 R13	13.1.0	13.2.0	R4	LTE_SC_enh_L1-Perf
36.133	3226	1	Rel-12	F	RP-152133	R4-158392	approved	Correction on A.8.16.17 E-UTRAN FDD activation and deactivation of known SCell in non-DRX	12.9.0	12.10.0	R4	LTE_CA_B1_B3-Perf
36.133	3227	-	Rel-13	A	RP-152133	R4-157470	approved	Correction on A.8.16.17 E-UTRAN FDD activation and deactivation of known SCell in non-DRX	13.1.0	13.2.0	R4	LTE_CA_B1_B3-Perf
36.133	3228	1	Rel-12	F	RP-152133	R4-158394	approved	Correction on A.8.16.18 E-UTRAN TDD activation and deactivation of known SCell in non-DRX	12.9.0	12.10.0	R4	LTE_CA_B1_B3-Perf
36.133	3229	-	Rel-13	A	RP-152133	R4-157473	approved	Correction on A.8.16.18 E-UTRAN TDD activation and deactivation of known SCell in non-DRX	13.1.0	13.2.0	R4	LTE_CA_B1_B3-Perf
36.133	3230	1	Rel-12	F	RP-152133	R4-158395	approved	Correction on A.8.16.35 3 DL PCell in FDD CA Activation and Deactivation of Known SCell in Non-DRX	12.9.0	12.10.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT
36.133	3231	-	Rel-13	A	RP-152133	R4-157476	approved	Correction on A.8.16.35 3 DL PCell in FDD CA Activation and Deactivation of Known SCell in Non-DRX	13.1.0	13.2.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3232	1	Rel-12	F	RP-152133	R4-158396	approved	Correction on A.8.16.36 3 DL PCell in TDD CA Activation and Deactivation of Known SCell in Non-DRX	12.9.0	12.10.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT
36.133	3233	-	Rel-13	A	RP-152133	R4-157479	approved	Correction on A.8.16.36 3 DL PCell in TDD CA Activation and Deactivation of Known SCell in Non-DRX	13.1.0	13.2.0	R4	LTE_CA_B1_B41_B41-Perf,LTE_CA_B3_B42_B42-Perf,LTE_CA_B8_B41_B41-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B3_B40_B40-Perf,LTE_CA_B7_B40_B40-Perf,LTE_CA_B8_B42_B42-Perf,LTE_CA_B1_B42_B42-Perf,LTE_CA_B21_B42_B42-Perf,LTE_CA_B28_B40_B40-Perf,LT
36.133	3234	1	Rel-12	F	RP-152133	R4-158397	approved	Correction on A.8.16.37 3DL FDD CA activation and deactivation of known SCell in non-DRX	12.9.0	12.10.0	R4	LTE_CA_B1_B3_B5-Perf,LTE_CA_B1_B3_B8-Perf,LTE_CA_B1_B3_B19-Perf,LTE_CA_B1_B3_B20-Perf,LTE_CA_B1_B3_B26-Perf,LTE_CA_B1_B5_B7-Perf,LTE_CA_B1_B7_B20-Perf,LTE_CA_B1_B18_B28-Perf,LTE_CA_B1_B19_B21-Perf,LTE_CA_B2_B2_B5-Perf,LTE_CA_B2_B2_B13-Perf,LTE_CA_B2_B4_B4

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3235	-	Rel-13	A	RP-152133	R4-157482	approved	Correction on A.8.16.37 3DL FDD CA activation and deactivation of known SCell in non-DRX	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B5-Perf,LTE_CA_B1_B3_B8-Perf,LTE_CA_B1_B3_B19-Perf,LTE_CA_B1_B3_B20-Perf,LTE_CA_B1_B3_B26-Perf,LTE_CA_B1_B5_B7-Perf,LTE_CA_B1_B7_B20-Perf,LTE_CA_B1_B18_B28-Perf,LTE_CA_B1_B19_B21-Perf,LTE_CA_B2_B2_B5-Perf,LTE_CA_B2_B2_B13-Perf,LTE_CA_B2_B4_B4
36.133	3236	1	Rel-12	F	RP-152133	R4-158398	approved	Correction on A.8.16.38 3DL TDD CA activation and deactivation of known SCell in non-DRX	12.9.0	12.10.0	R4	LTE_CA_B39_B41_B41-Perf, LTE_CA_B39_B39_B41-Perf, LTE_CA_B28_B40_B40_B40-Perf, LTE_CA_B39_B41_B41_B41-Perf
36.133	3237	-	Rel-13	A	RP-152133	R4-157485	approved	Correction on A.8.16.38 3DL TDD CA activation and deactivation of known SCell in non-DRX	13.1.0	13.2.0	R4	LTE_CA_B39_B41_B41-Perf, LTE_CA_B39_B39_B41-Perf, LTE_CA_B28_B40_B40_B40-Perf, LTE_CA_B39_B41_B41_B41-Perf
36.133	3238	1	Rel-13	B	RP-152152	R4-158152	approved	CR on RRM requirements for SSTD reporting for Dual Connectivity	13.1.0	13.2.0	R4	LTE_dualC_enh-Core
36.133	3239	1	Rel-13	B	RP-152152	R4-158155	approved	CR on maximum uplink timing difference for Dual Connectivity	13.1.0	13.2.0	R4	LTE_dualC_enh-Core
36.133	3240	1	Rel-13	B	RP-152152	R4-158156	approved	CR on RRM requirements for 3 DL CC Dual connectivity	13.1.0	13.2.0	R4	LTE_dualC_enh-Core
36.133	3241	1	Rel-13	B	RP-152152	R4-158157	approved	CR on requirements of interruption for 3 DL CC Dual connectivity	13.1.0	13.2.0	R4	LTE_dualC_enh-Core
36.133	3243	1	Rel-13	B	RP-152163	R4-158375	approved	CR on RRM requirements for 5DL CC CA	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B19_B42_B42, LTE_CA_B1_B19_B21_B42_B42, LTE_CA_B1_B3_B7_B7_B28, LTE_CA_B3_B3_B7_B7_B28
36.133	3249	-	Rel-12	F	RP-152133	R4-157735	approved	CR on editorial and some minor changes for clarification for Rel-12 category 0 MTC requirements	12.9.0	12.10.0	R4	LC_MTC_LTE-Core, LTE_CA-Core
36.133	3250	-	Rel-13	B	RP-152171	R4-157788	approved	Introduction of Band 65	13.1.0	13.2.0	R4	LTE_1980_2170_REG1-Core
36.133	3251	-	Rel-13	B	RP-152172	R4-157791	approved	Introduction of Band 66	13.1.0	13.2.0	R4	LTE_AWS_EXT-Core
36.133	3253	2	Rel-13	B	RP-152149	R4-158380	approved	SCell activation/deactivation delay for PUCCH SCell	13.1.0	13.2.0	R4	LTE_CA_enh_b5C-Core
36.133	3256	1	Rel-13	B	RP-152146	R4-158123	approved	Beacon RSSI Reporting Requirements	13.1.0	13.2.0	R4	LTE_WLAN_radio-Perf
36.133	3260	1	Rel-13	B	RP-152148	R4-158127	approved	Core RRM requirements for LAA	13.1.0	13.2.0	R4	LTE_LAA-Core
36.133	3262	1	Rel-13	B	RP-152148	R4-158388	approved	LAA measurement requirements	13.1.0	13.2.0	R4	LTE_LAA-Core
36.133	3263	1	Rel-13	B	RP-152148	R4-158128	approved	LAA measurement accuracy requirements and measurement report mapping	13.1.0	13.2.0	R4	LTE_LAA-Core

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.133	3265	-	Rel-13	B	RP-152153	R4-158032	approved	RS-SINR measurement requirements	13.1.0	13.2.0	R4	LTE_MC_load-Core
36.133	3267	1	Rel-13	B	RP-152153	R4-158151	approved	RS-SINR measurement accuracy requirements	13.1.0	13.2.0	R4	LTE_MC_load-Core
36.133	3268	1	Rel-13	B	RP-152153	R4-158150	approved	RS-SINR measurement report mapping	13.1.0	13.2.0	R4	LTE_MC_load-Core
36.133	3269	1	Rel-13	B	RP-152154	R4-158387	approved	Extended DRX requirements in RRC_CONNECTED state	13.1.0	13.2.0	R4	LTE_extDRX-Core
36.133	3274	1	Rel-12	F	RP-152135	R4-158114	approved	CR on ProSe UE transmission timing in Any Cell Selection State	12.9.0	12.10.0	R4	LTE_D2D_Prox-Perf
36.133	3275	-	Rel-13	A	RP-152135	R4-158082	approved	CR on ProSe UE transmission timing in Any Cell Selection State	13.1.0	13.2.0	R4	LTE_D2D_Prox-Perf
36.133	3276	-	Rel-10	F	RP-152133	R4-158190	approved	Alignment of time when UE starts CSI reporting for activated SCell	10.20.0	10.21.0	R4	LTE_CA_B1_B3-Perf
36.133	3277	-	Rel-11	A	RP-152133	R4-158191	approved	Alignment of time when UE starts CSI reporting for activated SCell	11.14.1	11.15.0	R4	LTE_CA_B1_B3-Perf
36.133	3278	-	Rel-12	A	RP-152133	R4-158192	approved	Alignment of time when UE starts CSI reporting for activated SCell	12.9.0	12.10.0	R4	LTE_CA_B1_B3-Perf
36.133	3279	-	Rel-13	A	RP-152133	R4-158193	approved	Alignment of time when UE starts CSI reporting for activated SCell	13.1.0	13.2.0	R4	LTE_CA_B1_B3-Perf
36.141	0772	-	Rel-13	B	RP-152168	R4-155982	approved	Introduction of intra-band CA_8B to TS 36.141	13.1.0	13.2.0	R4	LTE_CA_C_B8-Perf
36.141	0782	-	Rel-13	B	RP-152171	R4-156418	approved	Introduction of Band 65 to TS 36.141	13.1.0	13.2.0	R4	LTE_1980_2170_REG1-Perf
36.141	0783	1	Rel-13	B	RP-152157	R4-156892	approved	Introduction of Band 67 and CA_20-67 to 36.141	13.1.0	13.2.0	R4	LTE_CA_700EU_B20-Perf
36.141	0789	-	Rel-13	B	RP-152167	R4-156969	approved	Introduction of intra-band CA_5B to TS 36.141	13.1.0	13.2.0	R4	LTE_CA_C_B5-Perf
36.141	0790	-	Rel-13	B	RP-152169	R4-156973	approved	Introduction of intra-band NC CA_5A-5A to TS 36.141	13.1.0	13.2.0	R4	LTE_CA_NC_B5-Perf
36.141	0792	-	Rel-13	B	RP-152173	R4-157607	approved	Introduction of 1447-1467MHz Band into 36.141	13.1.0	13.2.0	R4	LTE_TDD_1447MHz_China-Core
36.141	0793	1	Rel-11	F	RP-152132	R4-158230	approved	Correction on UEM requirement for MB-MSR	11.13.0	11.14.0	R4	MB_MSR_RF-Perf
36.141	0794	-	Rel-12	A	RP-152132	R4-157625	approved	Correction on UEM requirement for MB-MSR	12.9.0	12.10.0	R4	MB_MSR_RF-Perf
36.141	0795	-	Rel-13	A	RP-152132	R4-157626	approved	Correction on UEM requirement for Multi-band base station	13.1.0	13.2.0	R4	MB_MSR_RF-Perf
36.141	0796	1	Rel-11	F	RP-152132	R4-158316	approved	BS Spec improvements: TS 36.141 Corrections	11.13.0	11.14.0	R4	TEI11
36.141	0797	-	Rel-12	A	RP-152132	R4-157750	approved	BS Spec improvements: TS 36.141 Corrections	12.9.0	12.10.0	R4	TEI11
36.141	0798	-	Rel-13	A	RP-152132	R4-157751	approved	BS Spec improvements: TS 36.141 Corrections	13.1.0	13.2.0	R4	TEI11
36.141	0804	-	Rel-11	F	RP-152132	R4-157848	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	11.13.0	11.14.0	R4	LTE_CA_Enh-Perf
36.141	0805	-	Rel-12	A	RP-152132	R4-157849	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	12.9.0	12.10.0	R4	LTE_CA_Enh-Perf
36.141	0806	-	Rel-13	A	RP-152132	R4-157850	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	13.1.0	13.2.0	R4	LTE_CA_Enh-Perf
36.141	0811	-	Rel-13	B	RP-152156	R4-158005	approved	Introduction of 2DL CA combinations	13.1.0	13.2.0	R4	LTE_CA_B3_B41-Perf, LTE_CA_B20_B40-Perf, LTE_CA_B5_B38-Perf

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36.141	0812	-	Rel-13	B	RP-152161	R4-158007	approved	Introduction of 3DL CA combinations	13.1.0	13.2.0	R4	LTE_CA_B1_B3_B7-Perf,LTE_CA_B1_B11_B18-Perf,LTE_CA_B28_B40_B40-Perf,LTE_CA_B7_B42_B42-Perf,LTE_CA_B28_B41_B41-Perf,LTE_CA_B28_B42_B42-Perf,LTE_CA_B3_B41_B42-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B3_B7_B38-Perf,LTE_CA_B7_B20_B38-Perf
36.141	0813	-	Rel-13	B	RP-152162	R4-158009	approved	Introduction of 4DL CA combinations	13.1.0	13.2.0	R4	LTE_CA_B2_B2_B4_B5-Perf, LTE_CA_B2_B2_B5_B12-Perf, LTE_CA_B2_B4_B5_B12-Perf, LTE_CA_B4_B4_B5_B12-Perf, LTE_CA_B2_B4_B4_B5-Perf, LTE_CA_B1_B3_B7_B8-Perf, LTE_CA_B3_B28_B40_B40-Perf, LTE_CA_B1_B3_B8_B40-Perf, LTE_CA_B1_B3_B5_B40-Perf
36.141	0814	1	Rel-11	F	RP-152132	R4-158285	approved	Clarification on the transmitter intermodulation requirement in TS36.141	11.13.0	11.14.0	R4	TEI11
36.141	0815	-	Rel-12	A	RP-152132	R4-158022	approved	Clarification on the transmitter intermodulation requirement in TS36.141	12.9.0	12.10.0	R4	TEI11
36.141	0816	-	Rel-13	A	RP-152132	R4-158023	approved	Clarification on the transmitter intermodulation requirement in TS36.141	13.1.0	13.2.0	R4	TEI11
36.141	0818	-	Rel-13	B	RP-152172	R4-158080	approved	Introduction of Band 66 to 36.141	13.1.0	13.2.0	R4	LTE_AWS_EXT-Perf
36.201	0010	3	Rel-13	B	RP-152026	R1-157899	approved	Introduction of LAA	12.2.0	13.0.0	R1	LTE_LAA-Core
36.201	0011	-	Rel-13	B	RP-152024	R1-157518	postponed	Introduction of LC/EC MTC	12.2.0		R1	LTE_MTCe2_L1-Core
36.201	0012	-	Rel-13	B	RP-152027	R1-157519	approved	Introduction of Rel-13 eCA	12.2.0	13.0.0	R1	LTE_CA_enh_b5C-Core
36.201	0013	-	Rel-13	B	RP-152025	R1-157520	approved	Introduction of EB/FD-MIMO	12.2.0	13.0.0	R1	LTE_EBF_FDMIMO-Core
36.211	0204	2	Rel-13	B	RP-152125	R1-156352	approved	eD2D CR for 36.211	12.7.0	13.0.0	R1	LTE_eD2D_Prox-Core
36.211	0204	2	Rel-13	B	RP-152033	R1-156352	reissued	eD2D CR for 36.211	12.7.0		R1	LTE_eD2D_Prox-Core
36.211	0205	3	Rel-13	B	RP-152026	R1-157914	revised	Introduction of LAA	12.7.0		R1	LTE_LAA-Core
36.211	0205	4	Rel-13	B	RP-152258	-	approved	Introduction of LAA	12.7.0	13.0.0	R1	LTE_LAA-Core
36.211	0206	2	Rel-13	B	RP-152025	R1-157908	approved	Introduction of EB/FD-MIMO	12.7.0	13.0.0	R1	LTE_EBF_FDMIMO-Core
36.211	0207	5	Rel-13	B	RP-152024	R1-157918	postponed	Introduction of LC/EC MTC	12.7.0		R1	LTE_MTCe2_L1-Core
36.211	0208	1	Rel-13	B	RP-152027	R1-157912	approved	Introduction of Rel-13 eCA	12.7.0	13.0.0	R1	LTE_CA_enh_b5C-Core
36.211	0209	1	Rel-12	F	RP-152036	R1-157843	approved	36.211 CR on Modify max TA for dual connectivity	12.7.0	12.8.0	R1	LTE_SC_enh_dualC-Core
36.212	0177	-	Rel-12	F	RP-152038	R1-156487	approved	36.212 CR0177(Rel-12,F) Correction on rank indication bit widths	12.6.0	12.7.0	R1	TEI12

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36.212	0178	1	Rel-13	B	RP-152027	R1-157915	approved	Introduction of Rel 13 feature of eCA	12.6.0	13.0.0	R1	LTE_CA_enh_b5C-Core
36.212	0179	1	Rel-13	B	RP-152025	R1-157917	approved	Introduction of Rel 13 feature of EB/FD-MIMO	12.6.0	13.0.0	R1	LTE_EBF_FDMIMO-Core
36.212	0180	2	Rel-13	B	RP-152026	R1-157898	approved	Introduction of Rel 13 feature of LAA	12.6.0	13.0.0	R1	LTE_LAA-Core
36.212	0181	1	Rel-13	B	RP-152024	R1-157916	postponed	Introduction of Rel 13 feature of eMTC	12.6.0		R1	LTE_MTCe2_L1-Core
36.212	0182	-	Rel-13	B	RP-152031	R1-157324	approved	Introduction of Rel 13 feature for SC-PTM	12.6.0	13.0.0	R1	LTE_SC_PTM-Core
36.213	0530	1	Rel-12	F	RP-152034	R1-156104	approved	Clarification of PUCCH resource allocation related to EPDCCH Scells	12.7.0	12.8.0	R1	LTE_enh_dl_ctrl-Core
36.213	0531	-	Rel-12	F	RP-152037	R1-155551	approved	Clarification on the parameter notations for eIMTA	12.7.0	12.8.0	R1	LTE_TDD_eIMTA-Core
36.213	0533	3	Rel-13	B	RP-152125	R1-156385	approved	eD2D CR for 36.213	12.7.0	13.0.0	R1	LTE_eD2D_Prox-Core
36.213	0533	3	Rel-13	B	RP-152033	R1-156385	reissued	eD2D CR for 36.213	12.7.0		R1	LTE_eD2D_Prox-Core
36.213	0534	-	Rel-12	F	RP-152037	R1-156723	approved	Correction on aperiodic CSI transmission without UL-SCH according to table 7.2.1-1C	12.7.0	12.8.0	R1	LTE_TDD_eIMTA-Core
36.213	0535	1	Rel-12	F	RP-152038	R1-157527	approved	36.213 CR0535r1 (Rel-12,F) Introduction of new maximum TBS for TM9-10	12.7.0	12.8.0	R1	TEI12
36.213	0536	-	Rel-13	B	RP-152031	R1-157325	approved	Introduction of Rel 13 feature for SC-PTM	12.7.0	13.0.0	R1	LTE_SC_PTM-Core
36.213	0537	2	Rel-13	B	RP-152026	R1-157923	approved	Introduction of LAA (PHY layer aspects)	12.7.0	13.0.0	R1	LTE_LAA-Core
36.213	0538	5	Rel-13	B	RP-152026	R1-157922	approved	Introduction of LAA (eNB Channel Access Procedures)	12.7.0	13.0.0	R1	LTE_LAA-Core
36.213	0539	1	Rel-13	B	RP-152027	R1-157919	approved	Introduction of eCA	12.7.0	13.0.0	R1	LTE_CA_enh_b5C-Core
36.213	0540	3	Rel-13	B	RP-152126	-	postponed	Introduction of further LTE Physical Layer Enhancements for MTC	12.7.0		R1	LTE_MTCe2_L1-Core
36.213	0541	1	Rel-13	B	RP-152025	R1-157921	approved	Introduction of EB/FD-MIMO	12.7.0	13.0.0	R1	LTE_EBF_FDMIMO-Core
36.213	0542	-	Rel-12	F	RP-152034	R1-157542	approved	Clarification of PHICH resource assignement related to EPDCCH scheduled PUSCH	12.7.0	12.8.0	R1	LTE_enh_dl_ctrl-Core
36.213	0543	1	Rel-12	F	RP-152036	R1-157844	approved	36.213 CR on Modify max TA for dual connectivity	12.7.0	12.8.0	R1	LTE_SC_enh_dualC-Core
36.214	0027	1	Rel-13	B	RP-152125	R1-156353	approved	eD2D CR for 36.214	12.2.0	13.0.0	R1	LTE_eD2D_Prox-Core
36.214	0027	1	Rel-13	B	RP-152033	R1-156353	reissued	eD2D CR for 36.214	12.2.0		R1	LTE_eD2D_Prox-Core
36.214	0028	2	Rel-13	B	RP-152035	R1-157805	approved	Introduction of RS-SINR measurement for Multicarrier Load Distribution	12.2.0	13.0.0	R1	LTE_MC_load-Core
36.214	0029	1	Rel-13	B	RP-152026	R1-157842	approved	Introduction of LAA	12.2.0	13.0.0	R1	LTE_LAA-Core
36.214	0030	-	Rel-13	B	RP-152032	R1-157809	approved	Introduction of SSTD for dual connectivity enhancement	12.2.0	13.0.0	R1	LTE_dualC_enh-Core
36.300	0728	11	Rel-13	B	RP-152070	R2-157163	approved	Monitoring traffic volume per QoS group per PLMN	13.1.0	13.2.0	R2	RSE-RAN_LTE-Core
36.300	0772	6	Rel-13	B	RP-152081	R2-157164	approved	Introduction of handover enhancement for Dual Connectivity	13.1.0	13.2.0	R2	LTE_dualC_ext-Core
36.300	0779	5	Rel-13	B	RP-152067	R2-157165	approved	Introduction of Dedicated Core Network (DECOR) feature	13.1.0	13.2.0	R2	DECOR-UTRA_LTE-Core
36.300	0793	1	Rel-12	A	RP-152050	R2-157175	approved	IDC Overview Correction	12.7.0	12.8.0	R2	SPIA_IDC_LTE-Core
36.300	0794	1	Rel-13	A	RP-152050	R2-157176	approved	IDC Overview Correction	13.1.0	13.2.0	R2	SPIA_IDC_LTE-Core
36.300	0796	-	Rel-13	B	RP-152074	R2-156163	approved	Introduction of DC enhancement	13.1.0	13.2.0	R2	LTE_dualC_enh-Core
36.300	0797	1	Rel-13	B	RP-152081	R2-157063	approved	Removing SCG change restrictions regarding upon handover	13.1.0	13.2.0	R2	LTE_dualC_ext-Core
36.300	0798	2	Rel-13	B	RP-152078	R2-157173	approved	Introduction of Licensed-Assisted Access using LTE	13.1.0	13.2.0	R2	LTE_LAA-Core

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36.300	0799	1	Rel-13	B	RP-152080	R2-156964	approved	Introduction of SC-PTM	13.1.0	13.2.0	R2	LTE_SC_PTM-Core
36.300	0800	3	Rel-13	B	RP-152083	R2-157185	approved	Introduction of Stage 2 text for LTE-WiFi integration for legacy WLAN	13.1.0	13.2.0	R2	LTE_WLAN_radio_legacy-Core
36.300	0801	-	Rel-13	B	RP-152075	R2-156522	approved	Introduction of RS-SINR measurements	13.1.0	13.2.0	R2	LTE_MC_load-Core
36.300	0802	-	Rel-12	F	RP-152053	R2-156537	approved	Corrections on sidelink related description in TS 36.300	12.7.0	12.8.0	R2	LTE_D2D_Prox-Core
36.300	0803	-	Rel-13	A	RP-152053	R2-156538	approved	Corrections on sidelink related description in TS 36.300	13.1.0	13.2.0	R2	LTE_D2D_Prox-Core
36.300	0806	2	Rel-13	B	RP-152075	R2-157118	approved	Introduction of MCLD	13.1.0	13.2.0	R2	LTE_MC_load-Core
36.300	0809	1	Rel-13	B	RP-152077	R2-156902	approved	Introduction of LTE-WLAN Radio Level Integration and Interworking Enhancement stage-2	13.1.0	13.2.0	R2	LTE_WLAN_radio-Core
36.300	0810	2	Rel-13	B	RP-152069	R2-157137	approved	Introduction of low complexity UE and enhanced coverage features	13.1.0	13.2.0	R2	LTE_MTCe2_L1-Core
36.300	0811	1	Rel-11	F	RP-152050	R2-156847	approved	IDC Overview Correction	11.13.0	11.14.0	R2	SPIA_IDC_LTE-Core
36.300	0813	-	Rel-13	B	RP-152080	R2-157156	approved	Introduction of SC-PTM	13.1.0	13.2.0	R2	LTE_SC_PTM-Core
36.300	0814	-	Rel-13	B	RP-152084	R2-157157	approved	Introduction of PWS Failure Indication message	13.1.0	13.2.0	R2	WSR_EPS, TEI13
36.300	0815	-	Rel-13	B	RP-152084	R2-157158	approved	Addition of the information on the notification for planned reconfiguration	13.1.0	13.2.0	R2	TEI13
36.300	0816	-	Rel-13	B	RP-152070	R2-157159	approved	Enhanced overload procedure in RAN sharing	13.1.0	13.2.0	R2	RSE-RAN_LTE-Core
36.300	0817	-	Rel-13	B	RP-152081	R2-157160	approved	Tunnel Information of BBAI in Dual Connectivity	13.1.0	13.2.0	R2	LTE_dualC_ext-Core
36.300	0818	-	Rel-13	B	RP-152081	R2-157161	approved	Adding CSG support to DC	13.1.0	13.2.0	R2	LTE_dualC_ext-Core
36.300	0819	-	Rel-13	B	RP-152081	R2-157162	approved	Support of SIPTO@LN and LIPA for DC	13.1.0	13.2.0	R2	LTE_dualC_ext-Core
36.300	0820	-	Rel-13	B	RP-152072	R2-157152	approved	Introduction of eD2D	13.1.0	13.2.0	R2	LTE_eD2D_Prox-Core
36.300	0821	-	Rel-13	B	RP-152076	R2-157169	approved	Introducing extended DRX	13.1.0	13.2.0	R2	LTE_extDRX-Core
36.300	0822	-	Rel-13	B	RP-151957	-	approved	36.300 CR for capturing B5C and PUCCH on SCell	13.1.0	13.2.0	R2	LTE_CA_enh_b5C-Core
36.302	0062	-	Rel-12	F	RP-152053	R2-156062	approved	Corrections to Sidelink in TS 36.302	12.5.0	12.6.0	R2	LTE_D2D_Prox-Core
36.302	0063	-	Rel-13	B	RP-152071	R2-156166	approved	Introduction of PUCCH on SCell in CA	12.5.0	13.0.0	R2	LTE_CA_enh_b5C-Core
36.302	0064	1	Rel-13	B	RP-152080	R2-156974	approved	Introduction of SC-PTM	12.5.0	13.0.0	R2	LTE_SC_PTM-Core
36.304	0275	2	Rel-10	C	RP-152048	R2-157027	approved	Enabling multiple NS and P-Max operation per cell	10.8.0	10.9.0	R2	TEI10
36.304	0276	2	Rel-11	A	RP-152048	R2-157028	approved	Enabling multiple NS and P-Max operation per cell	11.6.0	11.7.0	R2	TEI10
36.304	0277	2	Rel-12	A	RP-152048	R2-157029	approved	Enabling multiple NS and P-Max per cell	12.6.0	12.7.0	R2	TEI10
36.304	0278	2	Rel-13	B	RP-152080	R2-157130	approved	Introduction of SC-PTM	12.6.0	13.0.0	R2	LTE_SC_PTM-Core
36.304	0280	1	Rel-13	B	RP-152075	R2-156958	approved	Extension of Frequency Priorities	12.6.0	13.0.0	R2	LTE_MC_load-Core
36.304	0281	3	Rel-13	B	RP-152075	R2-157144	approved	Introduction of load redistribution in RRC_IDLE	12.6.0	13.0.0	R2	LTE_MC_load-Core
36.304	0285	1	Rel-13	B	RP-152082	R2-156955	approved	Introduction of IDC Impact to Logged Measurements	12.6.0	13.0.0	R2	LTE_eMDT2-Core
36.304	0286	-	Rel-13	B	RP-152066	R2-157022	approved	Introduction of ACDC in TS 36.304	12.6.0	13.0.0	R2	ACDC-RAN-Core
36.304	0287	-	Rel-13	B	RP-152072	R2-157149	approved	Introducing eSL	12.6.0	13.0.0	R2	LTE_eD2D_Prox-Core
36.304	0288	-	Rel-13	B	RP-152076	R2-157168	approved	Introducing extended DRX	12.6.0	13.0.0	R2	LTE_extDRX-Core
36.305	0061	2	Rel-13	B	RP-152068	R2-157059	approved	RAT-Independent positioning enhancements	12.2.0	13.0.0	R2	UTRA_LTE_iPos_enh-Core

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36.306	0299	2	Rel-12	C	RP-152049	R2-157045	approved	Alternative new maximum transport block sizes for DL 64QAM and 256QAM in TM9/10	12.6.0	12.7.0	R2	LTE_eDL_MIMO-Core, COMP_LTE_DL-Core, TEI12
36.306	0301	1	Rel-13	B	RP-152074	R2-156905	approved	Introduction of DC enhancement	12.6.0	13.0.0	R2	LTE_dualC_enh-Core
36.306	0302	2	Rel-12	F	RP-152054	R2-157116	revised	Support of 256QAM for UE categories 6,7,9 and 10	12.6.0		R2	TEI12, LTE_SC_enh_L1-Core
36.306	0302	3	Rel-12	C	RP-151830	-	not pursued	Support of 256QAM for UE categories 6,7,9 and 10	12.6.0		R2	TEI12, LTE_SC_enh_L1-Core
36.306	0303	1	Rel-12	F	RP-152048	R2-156848	approved	Clarification on support of extened wait time	12.6.0	12.7.0	R2	NIMTC-RAN_overload, TEI12
36.306	0304	1	Rel-13	B	RP-152080	R2-156973	approved	Introduction of SC-PTM	12.6.0	13.0.0	R2	LTE_SC_PTM-Core
36.306	0305	2	Rel-13	B	RP-152071	R2-157136	approved	Introduction of CA enhancement	12.6.0	13.0.0	R2	LTE_CA_enh_b5C-Core
36.306	0308	1	Rel-13	B	RP-152075	R2-156963	approved	Introduction of RS-SINR measurements	12.6.0	13.0.0	R2	LTE_MC_load-Core
36.306	0309	-	Rel-12	F	RP-152053	R2-156539	approved	Definitions of sidelink terminologies in TS 36.306	12.6.0	12.7.0	R2	LTE_D2D_Prox-Core
36.306	0310	-	Rel-12	F	RP-152055	R2-156733	approved	Correction on categories in supportedBandCombination	12.6.0	12.7.0	R2	TEI12
36.306	0311	1	Rel-13	C	RP-152084	R2-157067	approved	White-list of cells for EUTRA measurement reporting	12.6.0	13.0.0	R2	TEI13
36.306	0312	1	Rel-12	F	RP-152053	R2-157043	approved	Clarification on tdd-FDD-CA-PCellDuplex	12.6.0	12.7.0	R2	LTE_CA_TDD_FDD-Core, LTE_SC_enh_dualC-Core
36.306	0313	1	Rel-12	F	RP-152053	R2-157178	approved	Clarification on Pcell support	12.6.0	12.7.0	R2	LTE_CA-Core, LTE_CA_TDD_FDD-Core, TEI12
36.306	0314	-	Rel-13	B	RP-152066	R2-157021	approved	Introduction of Application specific Congestion control for Data Communication in LTE	12.6.0	13.0.0	R2	ACDC-RAN-Core
36.306	0315	1	Rel-12	F	RP-152055	R2-157105	approved	Correction on capability rsrq-OnAllSymbols	12.6.0	12.7.0	R2	TEI12
36.306	0316	-	Rel-10	C	RP-152048	R2-157055	approved	Enabling multiple NS and P-Max operation per cell	10.14.0	10.15.0	R2	TEI10
36.306	0317	-	Rel-11	A	RP-152048	R2-157056	approved	Enabling multiple NS and P-Max operation per cell	11.12.0	11.13.0	R2	TEI10
36.306	0318	-	Rel-12	A	RP-152048	R2-157057	approved	Enabling multiple NS and P-Max operation per cell	12.6.0	12.7.0	R2	TEI10
36.306	0319	-	Rel-13	B	RP-152078	R2-156918	approved	Introduction of Licensed-Assisted Access using LTE	12.6.0	13.0.0	R2	LTE_LAA-Core
36.306	0322	-	Rel-13	B	RP-152076	R2-157170	approved	Introducing extended DRX	12.6.0	13.0.0	R2	LTE_extDRX-Core
36.307	0549	-	Rel-13	B	RP-152160	R4-155512	approved	Introduction of 4DL NC CA in band42 in 36.307	13.1.0	13.2.0	R4	LTE_CA_NC_B42_4DL-Perf
36.307	0556	-	Rel-12	B	RP-152133	R4-155828	approved	[Rel-12] Introduction of dual uplink CA into 36.307	12.9.0	12.10.0	R4	LTE_CA_2UL-A4-Core
36.307	0558	1	Rel-10	B	RP-152157	R4-156848	approved	Introducing B20 + B67 CA into TS 36.307	10.16.0	10.17.0	R4	LTE_CA_700EU_B20-Core
36.307	0559	-	Rel-11	A	RP-152157	R4-155894	approved	Introducing B20 + B67 CA into TS 36.307	11.13.0	11.14.0	R4	LTE_CA_700EU_B20-Core
36.307	0560	-	Rel-12	A	RP-152157	R4-155895	approved	Introducing B20 + B67 CA into TS 36.307	12.9.0	12.10.0	R4	LTE_CA_700EU_B20-Core
36.307	0561	-	Rel-13	A	RP-152157	R4-155896	approved	Introducing B20 + B67 CA into TS 36.307	13.1.0	13.2.0	R4	LTE_CA_700EU_B20-Core
36.307	0562	-	Rel-13	B	RP-152168	R4-155983	approved	Introduction of intra-band CA_8B to TS 36.307	13.1.0	13.2.0	R4	LTE_CA_C_B8-Perf
36.307	0563	-	Rel-12	B	RP-152168	R4-155984	approved	Introduction of intra-band CA_8B to TS 36.307	12.9.0	12.10.0	R4	LTE_CA_C_B8-Perf
36.307	0564	-	Rel-11	B	RP-152168	R4-155985	approved	Introduction of intra-band CA_8B to TS 36.307	11.13.0	11.14.0	R4	LTE_CA_C_B8-Perf
36.307	0565	-	Rel-10	B	RP-152168	R4-155986	approved	Introduction of intra-band CA_8B to TS 36.307	10.16.0	10.17.0	R4	LTE_CA_C_B8-Perf
36.307	0566	-	Rel-11	B	RP-152133	R4-156028	approved	[Rel-11] Introduction of dual uplink CA into 36.307	11.13.0	11.14.0	R4	LTE_CA_2UL-A4-Core
36.307	0567	-	Rel-11	B	RP-152164	R4-156061	approved	Introduction of 3DL/2UL inter-band CA combinations with self-interference issues	11.13.0	11.14.0	R4	LTE_CA_3DL_2UL-Perf

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36.307	0568	-	Rel-12	B	RP-152164	R4-156063	approved	Introduction of 3DL/2UL inter-band CA combinations with self-interference issues	12.9.0	12.10.0	R4	LTE_CA_3DL_2UL-Perf
36.307	0577	-	Rel-10	B	RP-152171	R4-156086	approved	Introduction of Band 65	10.16.0	10.17.0	R4	LTE_1980_2170_REG1-Perf
36.307	0578	-	Rel-11	B	RP-152171	R4-156087	approved	Introduction of Band 65	11.13.0	11.14.0	R4	LTE_1980_2170_REG1-Perf
36.307	0579	-	Rel-12	B	RP-152171	R4-156088	approved	Introduction of Band 65	12.9.0	12.10.0	R4	LTE_1980_2170_REG1-Perf
36.307	0580	-	Rel-13	B	RP-152171	R4-156089	approved	Introduction of Band 65	13.1.0	13.2.0	R4	LTE_1980_2170_REG1-Perf
36.307	0586	1	Rel-9	B	RP-152171	R4-157787	approved	Introduction of Band 65	9.14.0	9.15.0	R4	LTE_1980_2170_REG1-Perf
36.307	0589	-	Rel-13	B	RP-152167	R4-156970	approved	Introduction of intra-band CA_5B to TS 36.307	13.1.1	13.2.0	R4	LTE_CA_C_B5-Perf
36.307	0590	-	Rel-13	B	RP-152169	R4-156974	approved	Introduction of intra-band NC CA_5A-5A to TS 36.307	13.1.1	13.2.0	R4	LTE_CA_NC_B5-Perf
36.307	0591	-	Rel-11	B	RP-152133	R4-157046	approved	[Rel-11] Introduction of dual uplink CA into 36.307	11.13.0	11.14.0	R4	LTE_CA_2UL-A1-Core
36.307	0592	-	Rel-12	B	RP-152133	R4-157047	approved	[Rel-12] Introduction of dual uplink CA into 36.307	12.9.0	12.10.0	R4	LTE_CA_2UL-A1-Core
36.307	0593	-	Rel-11	B	RP-152164	R4-157231	approved	Introduction of 3DL/2UL Inter-band CA for CA_39A-41C and CA_39C-41A	11.13.0	11.14.0	R4	LTE_CA_B39_B41_B41-Perf, LTE_CA_B39_B39_B41-Perf
36.307	0594	-	Rel-12	B	RP-152164	R4-157232	approved	Introduction of 3DL/2UL Inter-band CA for CA_39A-41C and CA_39C-41A	12.9.0	12.10.0	R4	LTE_CA_B39_B41_B41-Perf, LTE_CA_B39_B39_B41-Perf
36.307	0595	-	Rel-12	B	RP-152166	R4-157235	approved	Introduction of 3DL/3UL Inter-band CA for CA_39A-41C and CA_39C-41A	12.9.0	12.10.0	R4	LTE_CA_3DL3UL_B39_B41_B41-Perf; LTE_CA_3DL3UL_B39_B39_B41-Perf
36.307	0596	-	Rel-13	B	RP-152166	R4-157236	approved	Introduction of 3DL/3UL Inter-band CA in TS36.307	13.1.1	13.2.0	R4	LTE_CA_3DL3UL_B39_B41_B41-Perf; LTE_CA_3DL3UL_B39_B39_B41-Perf
36.307	0597	-	Rel-12	B	RP-152163	R4-157348	approved	Introduction of 5DL/1UL CA combinations into TS 36.307 (Rel-12)	12.9.0	12.10.0	R4	LTE_CA_B1_B3_B19_B42_B42-Perf, LTE_CA_B1_B19_B21_B42_B42-Perf
36.307	0598	-	Rel-13	B	RP-152163	R4-157349	approved	Introduction of 5DL/1UL CA combinations into TS 36.307 (Rel-13)	13.1.1	13.2.0	R4	LTE_CA_B1_B3_B19_B42_B42-Perf, LTE_CA_B1_B19_B21_B42_B42-Perf
36.307	0599	-	Rel-11	B	RP-152164	R4-157405	approved	Introduction of 3DL/2UL inter-band CA_3A-7A-28A in TS36.307 Rel-11	11.13.0	11.14.0	R4	LTE_CA_3DL_2UL-Perf
36.307	0600	-	Rel-12	B	RP-152164	R4-157406	approved	Introduction of 3DL/2UL inter-band CA_3A-7A-28A in TS36.307 Rel-12	12.9.0	12.10.0	R4	LTE_CA_3DL_2UL-Perf
36.307	0601	-	Rel-10	B	RP-152162	R4-157427	approved	Introduction of the finished 4DL inter-band CAs fall back mode to TS 36.307	10.16.0	10.17.0	R4	LTE_CA_B2_B4_B5_B29-Perf, LTE_CA_B2_B5_B12_B12-Perf, LTE_CA_B41_B41_B42_B42-Perf, LTE_CA_B1_B3_B7_B8-Perf

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36.307	0602	-	Rel-11	B	RP-152162	R4-157428	approved	Introduction of finished 4DL inter-band CAs to TS 36.307	11.13.0	11.14.0	R4	LTE_CA_B1_B3_B7_B8-Perf,LTE_CA_B2_B2_B4_B5-Perf,LTE_CA_B2_B2_B5_B12-Perf,LTE_CA_B2_B2_B12_B12-Perf,LTE_CA_B2_B4_B4_B5-Perf,LTE_CA_B2_B4_B5_B12-Perf,LTE_CA_B2_B5_B12_B12-Perf,LTE_CA_B3_B7_B7_B28-Perf,LTE_CA_B4_B4_B5_B12-Perf,LTE_CA_B39_B39_B41_B41-Perf,LTE
36.307	0603	-	Rel-12	B	RP-152162	R4-157429	approved	Introduction of finished 4DL inter-band CAs to TS 36.307	12.9.0	12.10.0	R4	LTE_CA_B1_B3_B7_B8-Perf,LTE_CA_B2_B2_B4_B5-Perf,LTE_CA_B2_B2_B5_B12-Perf,LTE_CA_B2_B2_B12_B12-Perf,LTE_CA_B2_B4_B4_B5-Perf,LTE_CA_B2_B4_B5_B12-Perf,LTE_CA_B2_B5_B12_B12-Perf,LTE_CA_B3_B7_B7_B28-Perf,LTE_CA_B3_B28_B40_B40-Perf,LTE_CA_B4_B4_B5_B12-Perf,LTE_
36.307	0604	-	Rel-13	B	RP-152162	R4-157430	approved	Introduction of finished 4DL inter-band CAs to TS 36.307	13.1.1	13.2.0	R4	LTE_CA_B1_B3_B7_B8-Perf,LTE_CA_B2_B2_B4_B5-Perf,LTE_CA_B2_B2_B5_B12-Perf,LTE_CA_B2_B2_B12_B12-Perf,LTE_CA_B2_B4_B4_B5-Perf,LTE_CA_B2_B4_B5_B12-Perf,LTE_CA_B2_B5_B12_B12-Perf,LTE_CA_B3_B7_B7_B28-Perf,LTE_CA_B3_B28_B40_B40-Perf,LTE_CA_B4_B4_B5_B12-Perf,LTE_
36.307	0605	-	Rel-11	B	RP-152170	R4-157433	approved	Introduction of CA_7A-7A BCS1 to TS 36.307	11.13.0	11.14.0	R4	LTE_CA_NC_B7_BWset-Perf
36.307	0606	-	Rel-12	B	RP-152170	R4-157434	approved	Introduction of CA_7A-7A BCS1 to TS 36.307	12.9.0	12.10.0	R4	LTE_CA_NC_B7_BWset-Perf
36.307	0607	-	Rel-8	B	RP-152173	R4-157597	approved	Introduction of 1447-1467MHz Band into TS36.307	8.13.0	8.14.0	R4	LTE_TDD_1447MHz_China-Core
36.307	0608	-	Rel-9	B	RP-152173	R4-157598	approved	Introduction of 1447-1467MHz Band into 36.307	9.14.0	9.15.0	R4	LTE_TDD_1447MHz_China-Core
36.307	0609	-	Rel-10	B	RP-152173	R4-157599	approved	Introduction of 1447-1467MHz Band into 36.307	10.16.0	10.17.0	R4	LTE_TDD_1447MHz_China-Core
36.307	0610	-	Rel-11	B	RP-152173	R4-157600	approved	Introduction of 1447-1467MHz Band into 36.307	11.13.0	11.14.0	R4	LTE_TDD_1447MHz_China-Core
36.307	0611	-	Rel-12	B	RP-152173	R4-157601	approved	Introduction of 1447-1467MHz Band into 36.307	12.9.0	12.10.0	R4	LTE_TDD_1447MHz_China-Core

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36.307	0612	-	Rel-13	B	RP-152173	R4-157602	approved	Introduction of 1447-1467MHz Band into 36.307	13.1.1	13.2.0	R4	LTE_TDD_1447MHz_China-Core
36.307	0615	-	Rel-12	B	RP-152156	R4-157771	approved	Rel-13 2DL combinations	12.9.0	12.10.0	R4	LTE_CA_B3_B41-Perf, LTE_CA_B5_B38-Perf, LTE_CA_B20_B40-Perf
36.307	0616	-	Rel-13	B	RP-152156	R4-157772	approved	Rel-13 2DL combinations	13.1.1	13.2.0	R4	LTE_CA_B3_B41-Perf, LTE_CA_B5_B38-Perf, LTE_CA_B20_B40-Perf
36.307	0617	-	Rel-10	B	RP-152161	R4-157774	approved	Rel-13 3DL combinations	10.16.0	10.17.0	R4	LTE_CA_B1_B3_B7-Perf, LTE_CA_B1_B11_B18-Perf, LTE_CA_B4_B4_B7_BWset-Perf, LTE_CA_B4_B7_B12_BWset-Perf
36.307	0618	-	Rel-11	B	RP-152161	R4-157775	approved	Rel-13 3DL combinations	11.13.0	11.14.0	R4	LTE_CA_B1_B3_B7-Perf, LTE_CA_B1_B11_B18-Perf, LTE_CA_B4_B4_B7_BWset-Perf, LTE_CA_B4_B7_B12_BWset-Perf
36.307	0619	-	Rel-12	B	RP-152161	R4-157776	approved	Rel-13 3DL combinations	12.9.0	12.10.0	R4	LTE_CA_B1_B3_B7-Perf,LTE_CA_B1_B3_B40-Core,LTE_CA_B1_B8_B40-Core,LTE_CA_B1_B11_B18-Perf,LTE_CA_B3_B7_B38-Perf,LTE_CA_B3_B41_B41-Perf,LTE_CA_B3_B41_B42-Core,LTE_CA_B4_B4_B7_BWset-Perf,LTE_CA_B4_B7_B12_BWset-Perf,LTE_CA_B5_B40_B40-Perf,LTE_CA_B7_B20_B38-Per
36.307	0620	-	Rel-13	B	RP-152161	R4-157777	approved	Rel-13 3DL combinations	13.1.1	13.2.0	R4	LTE_CA_B1_B3_B7-Perf,LTE_CA_B1_B3_B40-Perf,LTE_CA_B1_B8_B40-Perf,LTE_CA_B1_B11_B18-Perf,LTE_CA_B3_B7_B38-Perf,LTE_CA_B3_B8_B40-Perf,LTE_CA_B3_B41_B41-Perf,LTE_CA_B3_B41_B42-Perf,LTE_CA_B4_B4_B7_BWset-Perf,LTE_CA_B4_B7_B12_BWset-Perf,LTE_CA_B5_B40_B40-Perf
36.307	0624	-	Rel-9	B	RP-152172	R4-157793	approved	Introduction of Band 66	9.14.0	9.15.0	R4	LTE_AWS_EXT-Perf

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36.307	0625	-	Rel-10	B	RP-152172	R4-157794	approved	Introduction of Band 66	10.16.0	10.17.0	R4	LTE_AWS_EXT-Perf
36.307	0626	-	Rel-11	B	RP-152172	R4-157795	approved	Introduction of Band 66	11.13.0	11.14.0	R4	LTE_AWS_EXT-Perf
36.307	0627	-	Rel-12	B	RP-152172	R4-157796	approved	Introduction of Band 66	12.9.0	12.10.0	R4	LTE_AWS_EXT-Perf
36.307	0628	-	Rel-13	B	RP-152172	R4-157797	approved	Introduction of Band 66	13.1.1	13.2.0	R4	LTE_AWS_EXT-Perf
36.307	0629	-	Rel-11	B	RP-152165	R4-157837	approved	Introduction of 2 UL and 3 DL mixed inter/intra cases without MSD into 36.307 Rel-11	11.13.0	11.14.0	R4	LTE_CA_3DL_2UL_inter_intra-Perf
36.307	0630	-	Rel-11	B	RP-152159	R4-157860	approved	Introduction of intra-band non-contiguous CA in Band 41 for 4DL	11.13.0	11.14.0	R4	LTE_CA_NC_B41_4DL-Perf
36.307	0631	-	Rel-12	A	RP-152159	R4-157861	approved	Introduction of intra-band non-contiguous CA in Band 41 for 4DL	12.9.0	12.10.0	R4	LTE_CA_NC_B41_4DL-Perf
36.307	0632	-	Rel-13	A	RP-152159	R4-157862	approved	Introduction of intra-band non-contiguous CA in Band 41 for 4DL	13.1.1	13.2.0	R4	LTE_CA_NC_B41_4DL-Perf
36.307	0633	-	Rel-12	B	RP-152165	R4-157868	approved	Introduction of 2 UL and 3 DL mixed inter/intra cases without MSD into 36.307 Rel-12	12.9.0	12.10.0	R4	LTE_CA_3DL_2UL_inter_intra-Perf
36.307	0634	-	Rel-13	B	RP-152165	R4-157871	approved	Introduction of 2 UL and 3 DL mixed inter/intra cases without MSD into 36.307 Rel-13	13.1.1	13.2.0	R4	LTE_CA_3DL_2UL_inter_intra-Perf
36.307	0635	-	Rel-10	B	RP-152167	R4-158255	approved	Introduction of intra-band CA_5B to TS 36.307	10.16.0	10.17.0	R4	LTE_CA_C_B5-Perf
36.307	0636	-	Rel-11	B	RP-152167	R4-158256	approved	Introduction of intra-band CA_5B to TS 36.307	11.13.0	11.14.0	R4	LTE_CA_C_B5-Perf
36.307	0637	-	Rel-12	B	RP-152167	R4-158257	approved	Introduction of intra-band CA_5B to TS 36.307	12.9.0	12.10.0	R4	LTE_CA_C_B5-Perf
36.307	0638	-	Rel-11	B	RP-152169	R4-158259	approved	Introduction of intra-band non-contiguous CA in Band 5	11.13.0	11.14.0	R4	LTE_CA_NC_B5-Perf
36.307	0639	-	Rel-12	B	RP-152169	R4-158260	approved	Introduction of intra-band non-contiguous CA in Band 5	12.9.0	12.10.0	R4	LTE_CA_NC_B5-Perf
36.307	0543 a	-	Rel-13	B	RP-152158	R4-155480	approved	Release independent requirements for CA_42E (Rel-13)	13.1.0	13.2.0	R4	LTE_CA_C_B42_4DL-Perf
36.307	0544 a	2	Rel-12	B	RP-152158	R4-157218	approved	Release independent requirements for CA_42E (Rel-12)	12.9.0	12.10.0	R4	LTE_CA_C_B42_4DL-Perf
36.307	0545 a	1	Rel-11	B	RP-152158	R4-156844	approved	Release independent requirements for CA_42E (Rel-11)	11.13.0	11.14.0	R4	LTE_CA_C_B42_4DL-Perf
36.307	0547 a	-	Rel-11	B	RP-152160	R4-155510	approved	Introduction of 4DL NC CA in band42 in 36.307	11.13.0	11.14.0	R4	LTE_CA_NC_B42_4DL-Perf
36.307	0548 a	-	Rel-12	B	RP-152160	R4-155511	approved	Introduction of 4DL NC CA in band42 in 36.307	12.9.0	12.10.0	R4	LTE_CA_NC_B42_4DL-Perf
36.314	0034	1	Rel-13	B	RP-152082	R2-157109	approved	New MDT measurement introduced by feMDT	12.0.0	13.0.0	R2	LTE_eMDT2-Core
36.314	0035	-	Rel-13	B	RP-151955	-	approved	Introduction of data volume measurements in shared E-UTRAN	12.0.0	13.0.0	R2	RSE-RAN_LTE-Core
36.321	0801	-	Rel-12	F	RP-152055	R2-156076	approved	Correction on transparent MAC PDU	12.7.0	12.8.0	R2	TEI12
36.321	0802	-	Rel-12	F	RP-152053	R2-156396	approved	Correction on MAC header for SL-SCH	12.7.0	12.8.0	R2	LTE_D2D_Prox-Core
36.321	0805	-	Rel-12	F	RP-152053	R2-156540	approved	Corrections for sidelink in TS 36.321	12.7.0	12.8.0	R2	LTE_D2D_Prox-Core
36.321	0806	2	Rel-13	B	RP-152072	R2-157150	approved	Introduction of eD2D	12.7.0	13.0.0	R2	LTE_eD2D_Prox-Core
36.321	0811	2	Rel-13	B	RP-152071	R2-157108	approved	Introduction of Carrier Aggregation enhancements beyond 5 CCs	12.7.0	13.0.0	R2	LTE_CA_enh_b5C-Core

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36.321	0815	2	Rel-13	B	RP-152080	R2-157180	approved	Introduction of SC-PTM in MAC	12.7.0	13.0.0	R2	LTE_SC_PTM-Core
36.321	0821	2	Rel-13	B	RP-152078	R2-157174	approved	Introduction of LAA in MAC	12.7.0	13.0.0	R2	LTE_LAA-Core
36.322	0114	-	Rel-13	B	RP-152071	R2-156371	approved	Introduction of extended RLC protocol formats for CA enhancement	12.3.0	13.0.0	R2	LTE_CA_enh_b5C-Core
36.322	0115	-	Rel-13	B	RP-152080	R2-156966	approved	Introduction of SC-PTM in RLC	12.3.0	13.0.0	R2	LTE_SC_PTM-Core
36.323	0144	1	Rel-12	F	RP-152053	R2-156891	approved	Update to Services expected from Lower Layers in DC	12.4.0	12.5.0	R2	LTE_SC_enh_dualC-Core
36.323	0145	-	Rel-12	F	RP-152053	R2-156323	approved	Corrections to Sidelink	12.4.0	12.5.0	R2	LTE_D2D_Prox-Core
36.323	0146	-	Rel-13	B	RP-152074	R2-156330	approved	Introduction of UL split bearer in PDCP	12.4.0	13.0.0	R2	LTE_dualC_enh-Core
36.323	0148	1	Rel-13	B	RP-152071	R2-156894	approved	Introduction of enhanced CA in PDCP	12.4.0	13.0.0	R2	LTE_CA_enh_b5C-Core
36.323	0149	2	Rel-13	B	RP-152072	R2-157151	approved	Introducing enhanced ProSe	12.4.0	13.0.0	R2	LTE_eD2D_Prox-Core
36.331	1872	6	Rel-13	B	RP-152071	R2-157135	approved	36331 CR for capturing B5C and SCell on PUCCH	12.7.0	13.0.0	R2	LTE_CA_enh_b5C-Core
36.331	1916	-	Rel-12	F	RP-152053	R2-156073	approved	Correction on SCG release	12.7.0	12.8.0	R2	LTE_SC_enh_dualC-Core
36.331	1917	-	Rel-13	B	RP-152084	R2-156074	approved	MCCH acquisition for 1.4MHz MBSFN	12.7.0	13.0.0	R2	TEI13
36.331	1919	2	Rel-12	C	RP-152049	R2-157044	approved	Alternative new maximum transport block sizes for DL 64QAM and 256QAM in TM9/10	12.7.0	12.8.0	R2	LTE_eDL_MIMO-Core, COMP_LTE_DL-Core, TEI12
36.331	1920	1	Rel-13	B	RP-152074	R2-156904	approved	Intdroduction of Dual Connectivity enhancements in Rel-13	12.7.0	13.0.0	R2	LTE_dualC_enh-Core
36.331	1921	3	Rel-10	C	RP-152048	R2-157103	approved	Enabling multiple NS and P-Max operation per cell	10.18.0	10.19.0	R2	TEI10
36.331	1922	3	Rel-11	A	RP-152048	R2-157101	revised	Enabling multiple NS and P-Max operation per cell	11.13.0		R2	TEI10
36.331	1922	4	Rel-11	A	RP-152112	-	approved	Enabling multiple NS and P-Max operation per cell	11.13.0	11.14.0	R2	TEI10
36.331	1923	3	Rel-12	A	RP-152048	R2-157102	revised	Enabling multiple NS and P-Max operation per cell	12.7.0		R2	TEI10
36.331	1923	4	Rel-12	A	RP-152113	-	approved	Enabling multiple NS and P-Max operation per cell	12.7.0	12.8.0	R2	TEI10
36.331	1925	1	Rel-10	F	RP-152048	R2-156844	approved	CR to correct UE messages to be sent only after security activation	10.18.0	10.19.0	R2	TEI10
36.331	1926	1	Rel-11	A	RP-152048	R2-156845	approved	CR to correct UE messages to be sent only after security activation	11.13.0	11.14.0	R2	TEI10
36.331	1927	2	Rel-12	A	RP-152048	R2-157177	approved	CR to correct UE messages to be sent only after security activation	12.7.0	12.8.0	R2	TEI10
36.331	1928	1	Rel-12	F	RP-152053	R2-156833	approved	highPriorityAccess for MMTEL voice, MMTEL video and SMS	12.7.0	12.8.0	R2	SCM_LTE-Core
36.331	1931	2	Rel-12	C	RP-152056	R2-157133	approved	Addition of establishment cause for mobile-originating VoLTE calls and network indication in SIB2	12.7.0	12.8.0	R2	TEI12
36.331	1932	-	Rel-12	F	RP-152053	R2-156185	approved	Clarification to SCG RLF timers and constants reconfiguration	12.7.0	12.8.0	R2	LTE_SC_enh_dualC-Core
36.331	1933	-	Rel-12	F	RP-152053	R2-156187	approved	Correction to triggerQuantityCSI-RS	12.7.0	12.8.0	R2	LTE_SC_enh_L1-Core
36.331	1934	1	Rel-12	F	RP-152050	R2-157048	approved	Some general RRC issues	12.7.0	12.8.0	R2	SPIA_IDC_LTE-Core, TEI12
36.331	1935	1	Rel-13	B	RP-152081	R2-157064	approved	Removing SCG change restrictions regarding upon handover	12.7.0	13.0.0	R2	LTE_dualC_ext-Core
36.331	1936	2	Rel-13	B	RP-152072	R2-157186	approved	Introducing eSL	12.7.0	13.0.0	R2	LTE_eD2D_Prox-Core
36.331	1937	-	Rel-13	B	RP-152084	R2-156237	approved	Paging optimization	12.7.0	13.0.0	R2	TEI13
36.331	1939	3	Rel-13	B	RP-152080	R2-157145	approved	Introduction of SC-PTM	12.7.0	13.0.0	R2	LTE_SC_PTM-Core
36.331	1940	1	Rel-13	B	RP-151868	-	revised	CR to 36.331 for introduction of LTE-WLAN RAN Level Integration supporting legacy WLAN	12.7.0		R2	LTE_WLAN_radio_legacy-Core

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36.331	1940	2	Rel-13	B	RP-152231	-	not pursued	Introduction of Stage 3 text for LTE-WiFi integration for legacy WLAN	12.7.0		R2	LTE_WLAN_radio_legacy-Core
36.331	1941	2	Rel-13	B	RP-152082	R2-157146	approved	Introduction of Rel-13 MDT enhancements	12.7.0	13.0.0	R2	LTE_eMDT2-Core
36.331	1946	-	Rel-12	F	RP-152053	R2-156435	approved	Correction to NAICS field descriptions	12.7.0	12.8.0	R2	LTE_NAICS-Core
36.331	1947	-	Rel-12	F	RP-152055	R2-156441	approved	Correction of need code definition terminology	12.7.0	12.8.0	R2	TEI12
36.331	1949	1	Rel-13	B	RP-152075	R2-156962	approved	Introduction of RS-SINR measurements using non critical extension	12.7.0	13.0.0	R2	LTE_MC_load-Core
36.331	1952	1	Rel-13	B	RP-152075	R2-156957	approved	Extension of Frequency Priorities	12.7.0	13.0.0	R2	LTE_MC_load-Core
36.331	1953	2	Rel-13	B	RP-152073	R2-157143	approved	Introducing CRS interference mitigation on SCell	12.7.0	13.0.0	R2	LTE_CRSIM-Perf
36.331	1955	3	Rel-13	B	RP-152075	R2-157154	approved	Introduction of load redistribution in RRC_IDLE	12.7.0	13.0.0	R2	LTE_MC_load-Core
36.331	1957	3	Rel-13	F	RP-152084	R2-157179	approved	Clarification on FGI bits setting for MCPTT	12.7.0	13.0.0	R2	TEI13
36.331	1961	2	Rel-13	B	RP-152079	R2-157062	approved	Introducing EBF FD MIMO parameters	12.7.0	13.0.0	R2	LTE_EBF_FDMIMO-Core
36.331	1963	-	Rel-11	F	RP-152050	R2-156731	approved	Clarification on FDD/TDD difference for UL CA IDC indication	11.13.0	11.14.0	R2	SPIA_IDC_LTE-Core
36.331	1964	-	Rel-12	A	RP-152050	R2-156732	approved	Clarification on FDD/TDD difference for UL CA IDC indication	12.7.0	12.8.0	R2	SPIA_IDC_LTE-Core
36.331	1965	1	Rel-12	F	RP-152055	R2-157050	approved	Correction on capability rsrq-OnAllSymbols	12.7.0	12.8.0	R2	TEI12
36.331	1966	1	Rel-10	F	RP-152046	R2-157034	approved	MaxLayerMIMO in HandoverPreparationInformation	10.18.0	10.19.0	R2	LTE-L23, TEI10
36.331	1969	1	Rel-12	F	RP-152053	R2-157040	approved	Correction on measurement identity autonomous removal in dual connectivity	12.7.0	12.8.0	R2	LTE_SC_enh_dualC-Core
36.331	1970	1	Rel-11	A	RP-152046	R2-157035	approved	MaxLayerMIMO in HandoverPreparationInformation	11.13.0	11.14.0	R2	LTE-L23, TEI10
36.331	1971	1	Rel-12	A	RP-152046	R2-157036	approved	MaxLayerMIMO in HandoverPreparationInformation	12.7.0	12.8.0	R2	LTE-L23, TEI10
36.331	1972	-	Rel-13	C	RP-152084	R2-156748	approved	White-list of cells for EUTRA measurement reporting	12.7.0	13.0.0	R2	TEI13
36.331	1973	3	Rel-12	F	RP-152053	R2-157184	approved	Clarification of MCG	12.7.0	12.8.0	R2	LTE_SC_enh_dualC-Core
36.331	1974	-	Rel-11	F	RP-152046	R2-156751	approved	Correction to SystemTimeInfoCDMA2000 IE	11.13.0	11.14.0	R2	LTE-L23, TEI11
36.331	1975	-	Rel-12	A	RP-152046	R2-156752	approved	Correction to SystemTimeInfoCDMA2000 IE	12.7.0	12.8.0	R2	LTE-L23, TEI11
36.331	1979	1	Rel-12	F	RP-152053	R2-157042	approved	Clarification on tdd-FDD-CA-PCellDuplex	12.7.0	12.8.0	R2	LTE_CA_TDD_FDD-Core, LTE_SC_enh_dualC-Core
36.331	1983	2	Rel-13	B	RP-152078	R2-156917	approved	Introduction of Licensed-Assisted Access using LTE	12.7.0	13.0.0	R2	LTE_LAA-Core
36.331	1984	1	Rel-13	B	RP-152066	R2-157100	approved	Introduction of Application specific Congestion control for Data Communication in LTE	12.7.0	13.0.0	R2	ACDC-RAN-Core
36.331	1986	1	Rel-12	F	RP-152053	R2-156843	approved	Correction to the support of Mobility State reporting	12.7.0	12.8.0	R2	HetNet_eMOB_LTE-Core
36.331	1987	-	Rel-12	F	RP-152046	R2-157037	approved	Correction to ASN.1 field names for 4-layer TM3/4	12.7.0	12.8.0	R2	LTE-L23, TEI12
36.331	1988	-	Rel-13	B	RP-152076	R2-157167	approved	Introducing extended DRX	12.7.0	13.0.0	R2	LTE_extDRX-Core
36.331	1989	-	Rel-12	C	RP-152057	R2-157182	not pursued	Addition of establishment cause for mobile-originating VoLTE calls without network indication in SIB2	12.7.0		R2	TEI12
36.331	1999	-	Rel-12	F	RP-151936	-	revised	CR on unknown Establishment Cause handling	12.7.0		R2	TEI12
36.331	1999	1	Rel-12	F	RP-152174	-	not pursued	CR on unknown Establishment Cause handling	12.7.0		R2	TEI12
36.355	0134	1	Rel-12	F	RP-152055	R2-157058	approved	Correction to the definition of Need codes	12.4.0	12.5.0	R2	TEI12
36.355	0137	3	Rel-13	B	RP-152068	R2-157125	approved	RAT-Independent positioning enhancements	12.4.0	13.0.0	R2	UTRA_LTE_iPos_enh-Core

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36.401	0072	3	Rel-12	F	RP-152085	R3-152317	approved	Correction on UE associations in eNB	12.2.0	12.3.0	R3	TEI12
36.401	0076	1	Rel-13	B	RP-152102	R3-152387	approved	Extension of X2AP IDs	12.2.0	13.0.0	R3	LTE_dualC_ext-Core
36.413	1315	6	Rel-13	B	RP-152100	R3-152652	approved	ProSe UE Relaying Support in S1AP	13.0.0	13.1.0	R3	LTE_eD2D_Prox-Core
36.413	1345	2	Rel-13	C	RP-152099	R3-152752	approved	Extension of PDCP SN	13.0.0	13.1.0	R3	LTE_CA_enh_b5C-Core
36.413	1348	4	Rel-13	B	RP-152102	R3-152896	approved	Adding CSG support to DC	13.0.0	13.1.0	R3	LTE_dualC_ext-Core
36.413	1362	4	Rel-13	B	RP-152096	R3-152915	approved	Introduction of Dedicated Core Network (DCN) feature	13.0.0	13.1.0	R3	DECOR-UTRA_LTE-Core
36.413	1368	1	Rel-13	B	RP-152102	R3-152789	approved	Support of SIPTO and LIPA for DC	13.0.0	13.1.0	R3	LTE_dualC_ext-Core
36.413	1369	3	Rel-13	B	RP-152103	R3-152916	approved	Introduction of feMDT	13.0.0	13.1.0	R3	LTE_eMDT2-Core
36.413	1372	-	Rel-13	B	RP-152102	R3-152600	approved	Tunnel Information of BBAI in Dual Connectivity	13.0.0	13.1.0	R3	LTE_dualC_ext-Core
36.413	1373	2	Rel-13	B	RP-152108	R3-152843	approved	Introduction of PWS Failure Indication message	13.0.0	13.1.0	R3	TEI13,WSR_EPS
36.423	0850	5	Rel-13	B	RP-152100	R3-152497	approved	UE-to-Network Relay authorization	13.1.0	13.2.0	R3	LTE_eD2D_Prox-Core
36.423	0892	2	Rel-13	C	RP-152099	R3-152753	approved	Extension of PDCP SN	13.1.0	13.2.0	R3	LTE_CA_enh_b5C-Core
36.423	0901	4	Rel-13	B	RP-152102	R3-152898	approved	Adding CSG support to DC	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.423	0907	-	Rel-13	F	RP-152086	R3-151987	approved	Correction on inter eNB CoMP	13.1.0	13.2.0	R3	COMP_LTE_IeNB_sig-Core
36.423	0910	5	Rel-13	B	RP-152102	R3-152892	approved	Support of SIPTO stand-alone architecture in dual connectivity	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.423	0911	2	Rel-13	B	RP-152102	R3-152889	approved	Support of SIPTO and LIPA in dual connectivity	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.423	0912	6	Rel-13	B	RP-152102	R3-152897	approved	Support of handover without SeNB change	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.423	0916	2	Rel-13	B	RP-152102	R3-152397	approved	Handling of user inactivity in the SeNB	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.423	0918	-	Rel-13	F	RP-152086	R3-152066	approved	Correction of Subband Index	13.1.0	13.2.0	R3	COMP_LTE_IeNB_sig-Core
36.423	0923	4	Rel-12	F	RP-152085	R3-152871	approved	Correction of intra cell handovers in multiband deployments	12.7.0	12.8.0	R3	TEI12
36.423	0924	4	Rel-13	A	RP-152085	R3-152872	approved	Correction of intra cell handovers in multiband deployments	13.1.0	13.2.0	R3	TEI12
36.423	0927	2	Rel-13	B	RP-152102	R3-152785	approved	Extension of UE X2AP ID	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.423	0929	2	Rel-13	B	RP-152102	R3-152888	approved	SIPTO@LN and LIPA bearer deactivation for DC (follow existing principle)	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.423	0932	3	Rel-13	B	RP-152103	R3-152917	approved	Introduction of feMDT	13.1.0	13.2.0	R3	LTE_eMDT2-Core
36.423	0936	2	Rel-13	B	RP-152108	R3-152912	approved	Addition of the Cell Deployment Status Indicator and replacing cell information	13.1.0	13.2.0	R3	TEI13
36.423	0939	1	Rel-13	B	RP-152102	R3-152836	approved	Tunnel Information of BBAI in Dual Connectivity	13.1.0	13.2.0	R3	LTE_dualC_ext-Core
36.425	0006	2	Rel-13	C	RP-152099	R3-152914	approved	Extension of PDCP SN	12.1.0	13.0.0	R3	LTE_CA_enh_b5C-Core
36.443	0109	5	Rel-13	B	RP-152101	R3-152813	approved	Introduction of SC-PTM	13.1.0	13.2.0	R3	LTE_SC_PTM-Core
36.444	0072	7	Rel-13	B	RP-152101	R3-152812	approved	Introduction of SC-PTM	13.0.0	13.1.0	R3	LTE_SC_PTM-Core
36.508	0641	-	Rel-12	F	RP-151703	R5-155083	approved	Update generic procedures 4.5A.19 and 4.5A.20	12.7.0	12.8.0	R5	EVS_codec-UEConTest
36.508	0642	-	Rel-12	F	RP-151685	R5-155111	approved	Editor notes correction in clause 5.2A.1A	12.7.0	12.8.0	R5	TEI8_Test
36.508	0643	-	Rel-12	F	RP-151705	R5-155130	approved	Editorial correction to Device to Device Proximity Services Test Environment	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.508	0644	-	Rel-12	F	RP-151710	R5-155234	approved	Introduction of combinations of system information blocks for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.508	0645	1	Rel-12	F	RP-151712	R5-156088	approved	Adding default message contents for NAICS test cases	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest

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36.508	0647	1	Rel-12	F	RP-151705	R5-156159	approved	Add generic procedures for ProSe UE registration	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.508	0648	1	Rel-12	F	RP-151705	R5-156012	approved	ProSe: Connection diagram for basic Tx/Rx testing	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.508	0650	1	Rel-12	F	RP-151701	R5-155961	approved	Addition of new generic procedures to check UE does not offload	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.508	0651	-	Rel-12	F	RP-151710	R5-155419	approved	Introduction of generic test procedures for Dual Connectivity for signalling testing	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.508	0652	-	Rel-12	F	RP-151710	R5-155434	approved	Introduction of default messages for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.508	0653	1	Rel-12	F	RP-151685	R5-156094	approved	Correction to UE test states for RF/RRM testing	12.7.0	12.8.0	R5	TEI8_Test
36.508	0654	1	Rel-12	F	RP-151700	R5-155865	approved	Connections for 3DL CA RRM test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.508	0655	-	Rel-12	F	RP-151685	R5-155490	approved	Correction to procedure for UE triggered establishment of a default EPS bearer context associated with an additional PDN	12.7.0	12.8.0	R5	TEI8_Test
36.508	0657	1	Rel-12	F	RP-151701	R5-155962	approved	Update of WLAN Offload procedures to and from EUTRA	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.508	0658	1	Rel-12	F	RP-151700	R5-155910	approved	3DL carrier aggregation combination corrections to Table 6.2.3.2-2 “Test frequencies for E-UTRA PCell and SCell for CA Inter-band operation (two bands)”	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.508	0659	-	Rel-12	F	RP-151705	R5-155647	approved	Addition of default Test UICC contents for DF_ProSe	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.508	0661	1	Rel-12	F	RP-151699	R5-155958	approved	Add generic procedures for IMS over WLAN	12.7.0	12.8.0	R5	MTSI_WLAN-UEConTest
36.508	0662	1	Rel-12	F	RP-151713	R5-155800	approved	Removal of incorrect test frequencies for CA_12B	12.7.0	12.8.0	R5	TEI12_Test
36.508	0663	1	Rel-12	F	RP-151705	R5-155922	approved	Clarification of SIB18/19 Table	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.509	0149	-	Rel-12	F	RP-151705	R5-155362	approved	ProSe test loop modes Enhancements	12.1.0	12.2.0	R5	LTE_D2D_Prox-UEConTest
36.521-1	2151	1	Rel-12	F	RP-151700	R5-155844	approved	New CA band combination CA_1A-3A-8A - Updates of 7.3A.5 RefSens	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2152	1	Rel-12	F	RP-151700	R5-155845	approved	New CA band combination CA_1A-3A-8A - Updates of 7.3.3 Delta RIB	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2153	1	Rel-13	F	RP-151714	R5-156071	approved	New TC: Maximum Power Reduction (MPR) for CA (intra-band contiguous DL CA and UL CA) for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2154	2	Rel-13	F	RP-151714	R5-156188 (actually R5-156072 is included in RP-151714 but it has the same contents but R5-156188 is for REL-13)	approved	New TC: Adjacent Channel Leakage power Ratio for CA (intra-band contiguous DL CA and UL CA) for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2155	1	Rel-12	F	RP-151689	R5-156095	approved	Update Minimum requirements for test case 6.2.3A.1	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2156	-	Rel-12	F	RP-151700	R5-155112	approved	Addition of simplified CA testing method (Annex C.3.5) into 36.521-1	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2157	-	Rel-12	F	RP-151708	R5-155113	approved	Uncertainty and Test Tolerance for FDD TM3 test case for LTE Type C performance requirements (8.2.1.3.1B)	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest

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36.521-1	2158	1	Rel-12	F	RP-151708	R5-155840	approved	Uncertainty and Test Tolerance for FDD TM4 test case for LTE Type C performance requirements (8.2.1.4.2A)	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2159	1	Rel-12	F	RP-151708	R5-155841	approved	Uncertainty and Test Tolerance for TDD TM4 test case for LTE Type C performance requirements (8.2.2.4.2A)	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2160	-	Rel-12	F	RP-151708	R5-155116	approved	Uncertainty and Test Tolerance for TDD TM8 test case for LTE Type C performance requirements (8.3.2.2.2)	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2161	-	Rel-12	F	RP-151708	R5-155117	approved	Uncertainty and Test Tolerance for FDD TM9 test case for LTE Type C performance requirements (8.3.1.2.2)	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2162	-	Rel-12	F	RP-151708	R5-155118	approved	Uncertainty and Test Tolerance for FDD TM3 multi-cell test case with TM1 interference for LTE Type C performance requirements (8.2.1.3.1C)	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2163	-	Rel-12	F	RP-151708	R5-155119	approved	Uncertainty and Test Tolerance for TDD TM3 multi-cell test case with TM1 interference for LTE Type C performance requirements (8.2.2.3.1C)	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2164	1	Rel-12	F	RP-151687	R5-156134	approved	Update to in-band Emissions Limits for less than 1GHz Carrier Frequencies	12.7.0	12.8.0	R5	TEI9_Test
36.521-1	2165	1	Rel-12	F	RP-151708	R5-155842	approved	Update of SUMIMO for LTE Type C performance TC 8.2.2.3.1B	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2166	1	Rel-12	F	RP-151708	R5-156062	approved	Addition of Minimum test time for LTE Type C performance in Annex G	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-1	2167	1	Rel-12	F	RP-151684	R5-156100	approved	Deleting redundant and outdated Demod scenario in Minimum test time	12.7.0	12.8.0	R5	TEI8_Test
36.521-1	2168	1	Rel-12	F	RP-151704	R5-155892	approved	Correction of test cases title for eDL MIMO Enhancement test cases	12.7.0	12.8.0	R5	LTE_eDL_MIMO_enh-UEConTest
36.521-1	2169	-	Rel-12	F	RP-151704	R5-155205	approved	Addition of test time for testing throughput ratios for eDL MIMO Enhancement	12.7.0	12.8.0	R5	LTE_eDL_MIMO_enh-UEConTest
36.521-1	2170	1	Rel-12	F	RP-151706	R5-156035	approved	New TC: 8.9.1.1.2 FDD Closed-loop spatial multiplexing performance (Cell-Specific Reference Symbols) for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2171	1	Rel-12	F	RP-151706	R5-156036	approved	New TC: 8.9.1.2.2 TDD Closed-loop spatial multiplexing performance (Cell-Specific Reference Symbols) for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2173	1	Rel-12	F	RP-151706	R5-156037	approved	Add new LC MTC test case 8.9.1.1.3 FDD PDSCH Single-layer Spatial Multiplexing on antenna ports 7 or 8 for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2174	1	Rel-12	F	RP-151706	R5-156038	approved	Add new LC MTC test case 8.9.1.2.1 TDD PDSCH Transmit Diversity for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2175	1	Rel-12	F	RP-151706	R5-156039	approved	Add new LC MTC test case 8.9.1.2.3 TDD PDSCH Single-layer Spatial Multiplexing on antenna ports 7 or 8 for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2176	1	Rel-12	F	RP-151706	R5-155807	approved	Add new LC MTC test case 9.7.2.1 FDD CQI Reporting under fading conditions for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest

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36.521-1	2177	1	Rel-12	F	RP-151706	R5-155808	approved	Add new LC MTC test case 9.7.2.2 TDD CQI Reporting under fading conditions for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2182	1	Rel-12	F	RP-151712	R5-155848	approved	LTE Type B performance requirements - Changes to clause 3	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest
36.521-1	2183	1	Rel-12	F	RP-151712	R5-155846	approved	LTE Type B performance requirements - Addition of fixed reference channels into Annex A	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest
36.521-1	2184	1	Rel-12	F	RP-151712	R5-155847	approved	LTE Type B performance requirements - Introduction of new interference models into Annex B.6	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest
36.521-1	2185	1	Rel-12	F	RP-151712	R5-156089	approved	LTE Type B performance requirements - Introduction of new test cases 8.2.1.2.5 and 8.2.1.2.6	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest
36.521-1	2186	1	Rel-12	F	RP-151712	R5-156090	approved	LTE Type B performance requirements - Introduction of new test cases 8.2.2.2.6 and 8.2.2.2.7	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest
36.521-1	2187	1	Rel-12	F	RP-151712	R5-156091	approved	LTE Type B performance requirements - Introduction of new test cases 9.3.8.1.1 and 9.3.8.1.2	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest
36.521-1	2188	1	Rel-12	F	RP-151712	R5-156092	approved	LTE Type B performance requirements - Adding six NAICS test cases into Annex F and G	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest
36.521-1	2189	1	Rel-12	F	RP-151706	R5-156040	approved	Addition of Minimum test time for Demodulation performance for UE category 0 in Annex G	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2190	1	Rel-12	F	RP-151706	R5-156110	approved	Introduction of new test case 8.9.2.1.1 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2191	1	Rel-12	F	RP-151706	R5-156041	approved	Introduction of new test case 8.9.2.2.1 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2192	2	Rel-12	F	RP-151707	R5-156130	approved	New CA 2UL Tx test case 6.3.5A.3.3 of Aggregate Power Control Tolerance for CA (intra-band non-contiguous DL CA and UL CA)	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2193	1	Rel-12	F	RP-151707	R5-156057	approved	New CA 2UL Tx test case 6.5.1A.3 Frequency Error for CA (intra-band non-contiguous DL CA and UL CA)	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2194	1	Rel-13	F	RP-151714	R5-156073	approved	New TC: 6.2.3_3 MPR for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2195	1	Rel-13	F	RP-151714	R5-156074	approved	New TC: 6.2.3_4 MPR for Multi-Cluster PUSCH with UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2196	1	Rel-13	F	RP-151714	R5-156075	approved	New TC: 6.2.4_2 AMPR for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2197	1	Rel-13	F	RP-151714	R5-156076	approved	New TC: 6.5.2.1_1 EVM for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2198	1	Rel-13	F	RP-151714	R5-156077	approved	New TC: 6.5.2A.1.1_1 EVM for CA with UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2199	1	Rel-13	F	RP-151714	R5-156078	approved	New TC: 6.6.2.2_1 Additional Spectrum Emission Mask for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2200	1	Rel-13	F	RP-151714	R5-156079	approved	New TC: 6.6.2.3_3 ACLR for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2201	1	Rel-13	F	RP-151714	R5-156080	approved	New TC: 6.6.2.3_4 ACLR for Multi-Cluster PUSCH with UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2202	1	Rel-13	F	RP-151714	R5-156081	approved	New TC: 6.6.3.3_1 Additional spurious emissions for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2203	1	Rel-13	F	RP-151714	R5-156082	approved	Addition of RMCs for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2204	1	Rel-13	F	RP-151714	R5-156083	approved	Introduction of uncertainties and TTs in Annex F for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2206	-	Rel-12	F	RP-151689	R5-155300	approved	Update of editor's note for TC 6.6.2.2A.1	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2207	1	Rel-12	F	RP-151700	R5-156020	approved	Update of RB configrations for TC 7.3A.5	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest

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36.521-1	2208	-	Rel-12	F	RP-151705	R5-155309	approved	ProSe: Update of general chapters in 36.521-1	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.521-1	2209	1	Rel-12	F	RP-151705	R5-156014	approved	ProSe: Reference sensitivity test	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.521-1	2210	1	Rel-12	F	RP-151705	R5-156013	approved	ProSe: Additions to Annexes for RF testing	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.521-1	2211	-	Rel-12	F	RP-151705	R5-155312	approved	ProSe: Update of annexes in 36.521-1	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.521-1	2212	-	Rel-12	F	RP-151684	R5-155313	approved	Update of UE categories for R8 in 36.521-1	12.7.0	12.8.0	R5	TEI8_Test
36.521-1	2213	1	Rel-12	F	RP-151689	R5-155804	approved	Update of UE categories for R10 in 36.521-1	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2214	-	Rel-12	F	RP-151696	R5-155316	approved	Update of UE categories for R11 in 36.521-1	12.7.0	12.8.0	R5	TEI11_Test
36.521-1	2215	-	Rel-12	F	RP-151707	R5-155360	approved	Test description for test case 6.3.3A.3: UE Transmit OFF power for CA (intra-band non-contiguous DL CA and UL CA)	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2216	-	Rel-12	F	RP-151689	R5-155361	approved	Correction to Test cases 9.6.1.1_A.1 and 9.6.1.2_A.1: FDD/TDD CQI Reporting under AWGN conditions – PUCCH 1-0 (2DL CA)	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2222	1	Rel-12	F	RP-151700	R5-156021	approved	Addition of soft-buffer test cases for FDD-TDD 2DL CA (8.2.3.2.1A, 8.2.3.2.2A)	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2224	1	Rel-12	F	RP-151700	R5-155851	approved	Update of 2DL TDD FDD CA PDSCH Closed Loop Multi Layer Spatial Multiplexing 4x2 for TDD PCell (8.2.3.3.2.1)	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2225	1	Rel-12	F	RP-151700	R5-155852	approved	Update of 3DL TDD FDD CA PDSCH Closed Loop Multi Layer Spatial Multiplexing 4x2 for TDD PCell (8.2.3.3.2.2)	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2226	-	Rel-12	F	RP-151707	R5-155394	approved	Updates of the test configuration about occupied bandwidth for CA (inter-band DL CA and UL CA)	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2227	1	Rel-12	F	RP-151689	R5-156096	approved	Updates of test configuration for OBW for intra-band contiguous UL CA	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2228	-	Rel-12	F	RP-151707	R5-155401	approved	Updates of message contents for ON/OFF time mask for 2UL inter-band CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2229	1	Rel-12	F	RP-151707	R5-156006	approved	Addition of initial conditions for frequency error for 2UL inter-band CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2230	1	Rel-12	F	RP-151707	R5-156007	approved	Updates of SEM for 2UL inter-band CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2231	1	Rel-12	F	RP-151707	R5-156008	approved	Updates of test requirements for general spurious for 2UL inter-band CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2232	-	Rel-12	F	RP-151707	R5-155405	approved	Updates of Refsens for 2UL inter-band CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2233	-	Rel-12	F	RP-151700	R5-155406	approved	Addition of CA_3A-42A to 7.3A.3 and applicability updates for all inter-band 2DL CA receiver test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2234	1	Rel-12	F	RP-151700	R5-156022	approved	Delta RIB,c updates for 3DL CA supporting UE	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2235	-	Rel-12	F	RP-151700	R5-155409	approved	Updatest of CA demodulation applicabilities in general section	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2236	1	Rel-12	F	RP-151700	R5-155850	approved	Addition of new test cases for TDD FDD CA PDSCH Open Loop for FDD PCell(2DL and 3DL)	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2237	1	Rel-12	F	RP-151700	R5-156023	approved	Addition of new test cases for TDD FDD CA PDSCH Closed Loop 4x2 for FDD PCell (2DL and 3DL)	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2239	1	Rel-12	F	RP-151700	R5-156024	approved	Correction to test point selection table for TDD-FDD CA cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2240	1	Rel-12	F	RP-151706	R5-156042	approved	Update of TC 9.7.1.2 TDD CQI reporting definition under AWGN conditions for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest

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36.521-1	2241	-	Rel-12	F	RP-151710	R5-155420	approved	Changes to general clauses for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.521-1	2242	1	Rel-12	F	RP-151710	R5-156016	approved	Introduction of FDD PDSCH Closed Loop Multi-Layer Spatial Multiplexing 4x2 for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.521-1	2243	1	Rel-12	F	RP-151710	R5-156017	approved	Introduction of TDD PDSCH Closed Loop Multi-Layer Spatial Multiplexing 4x2 for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.521-1	2244	1	Rel-12	F	RP-151710	R5-156018	approved	Introduction of FDD sustained data rate performance for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.521-1	2245	1	Rel-12	F	RP-151710	R5-156019	approved	Introduction of TDD sustained data rate performance for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.521-1	2246	-	Rel-12	F	RP-151710	R5-155425	approved	Introduction of the reference and abbreviations for Dual Connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.521-1	2247	-	Rel-12	F	RP-151700	R5-155426	approved	Removal of the duplicate clause 8.2.1.4.2_A.2.5	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2248	1	Rel-12	F	RP-151700	R5-155853	approved	Update for Annex for TDD/FDD Perf test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2250	1	Rel-12	F	RP-151700	R5-155855	approved	Clean up of 3DL CA Rx test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2251	1	Rel-12	F	RP-151700	R5-156025	approved	Correction to 7.3A.5	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2252	1	Rel-12	F	RP-151700	R5-156026	approved	Update CA perf test cases in clause 8	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2253	-	Rel-12	F	RP-151689	R5-155444	approved	Clean up of Tx test cases	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2254	1	Rel-12	F	RP-151689	R5-155802	approved	Correction to 2DL CA Rx test cases	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2255	-	Rel-12	F	RP-151689	R5-155446	approved	Correction to Rx UL CA test cases	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2256	-	Rel-12	F	RP-151684	R5-155447	approved	Correction to reference channel for CQI requirements	12.7.0	12.8.0	R5	TEI8_Test
36.521-1	2257	-	Rel-12	F	RP-151687	R5-155448	approved	Correction to UL RMC for single carrier SDR	12.7.0	12.8.0	R5	TEI9_Test
36.521-1	2258	1	Rel-12	F	RP-151689	R5-156101	approved	Clarification of DL configuration for wideband	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2259	-	Rel-12	F	RP-151696	R5-155450	approved	Correction to CoMP demodulation requirements	12.7.0	12.8.0	R5	TEI11_Test
36.521-1	2260	1	Rel-12	F	RP-151696	R5-156102	approved	Correction to Enhanced Performance Type A performance test cases	12.7.0	12.8.0	R5	TEI11_Test
36.521-1	2261	-	Rel-12	F	RP-151696	R5-155452	approved	Correction to Enhanced Performance Type A CQI reporting test	12.7.0	12.8.0	R5	TEI11_Test
36.521-1	2262	-	Rel-12	F	RP-151696	R5-155453	approved	Correction to CQI and RI Reporting test cases for feICIC	12.7.0	12.8.0	R5	TEI11_Test
36.521-1	2263	1	Rel-12	F	RP-151704	R5-155893	approved	Corrections to eDL MIMO enhancement TC 9.3.7.1_G+9.3.7.2_G	12.7.0	12.8.0	R5	LTE_eDL_MIMO_enh-UEConTest
36.521-1	2264	1	Rel-12	F	RP-151704	R5-155894	approved	Corrections to eDL MIMO enhancement TC 9.4.1.4.1_G+9.4.1.4.2_G	12.7.0	12.8.0	R5	LTE_eDL_MIMO_enh-UEConTest
36.521-1	2265	-	Rel-12	F	RP-151700	R5-155460	approved	CA RF: Update 3DL Refsense test requirements	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2266	1	Rel-12	F	RP-151689	R5-155803	approved	CA RF: Correction to message contents for 2DL Max Input Power TCs	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2267	-	Rel-12	F	RP-151700	R5-155462	approved	Corrections to Refsense minimum requirements	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2268	1	Rel-12	F	RP-151689	R5-156097	approved	CA RF: Minor corrections to section 6.6.3.3A	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2269	-	Rel-12	F	RP-151689	R5-155464	approved	CA RF: Update of test points for Rx inter-band test cases	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2271	1	Rel-12	F	RP-151700	R5-156027	approved	CA RF: Update to 3DL Refsense test configurations	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest

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36.521-1	2272	1	Rel-12	F	RP-151700	R5-155859	approved	CA RF: Correction to message contents for 3DL Max Input Power	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2274	-	Rel-12	F	RP-151700	R5-155471	approved	Corrections to message contents for CSI 3DL CA TCs 9.6.1.3.2+9.6.1.4.2	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2275	-	Rel-12	F	RP-151700	R5-155474	approved	Corrections to CA demodulation tests	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2276	-	Rel-12	F	RP-151689	R5-155476	approved	Corrections to message exceptions for CSI-RS setting	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2277	1	Rel-12	F	RP-151684	R5-156103	approved	Correction and addition of minimum test time for several tests	12.7.0	12.8.0	R5	TEI8_Test
36.521-1	2278	-	Rel-12	F	RP-151684	R5-155478	approved	Updates to Annexes A.2 and A.3	12.7.0	12.8.0	R5	TEI8_Test
36.521-1	2280	1	Rel-12	F	RP-151700	R5-155857	approved	Completion of Testcase 7.3A.5	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2281	1	Rel-12	F	RP-151700	R5-156028	approved	Improvements to 3DL OOB Testcase (7.6.2A.5)	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2282	-	Rel-12	F	RP-151706	R5-155530	approved	Addition of measurement uncertainty and test tolerances for TC 9.7.1.2 TDD CQI reporting definition under AWGN conditions for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2283	-	Rel-12	F	RP-151687	R5-155543	approved	Correction to Test Parameters for the test cases 10.1 and 10.2	12.7.0	12.8.0	R5	TEI9_Test
36.521-1	2284	1	Rel-12	F	RP-151684	R5-156104	approved	Correction to test cases of the section of 9.5.1	12.7.0	12.8.0	R5	TEI8_Test
36.521-1	2285	1	Rel-13	F	RP-151714	R5-156084	approved	New TC: A-MPR for CA (intra-band contiguous DL CA and UL CA) for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2286	1	Rel-13	F	RP-151714	R5-156085	approved	New TC: A-SEM for CA (intra-band contiguous DL CA and UL CA) for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2287	1	Rel-13	F	RP-151714	R5-156086	approved	New TC: Additional spurious emissions for CA (intra-band contiguous DL CA and UL CA) for UL 64QAM	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-1	2288	1	Rel-12	F	RP-151689	R5-155801	approved	Correction to 6.2.4A.1	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2289	-	Rel-12	F	RP-151689	R5-155554	approved	Correction to 6.6.3.3A.1	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2290	2	Rel-12	F	RP-151707	R5-156131	approved	New TC of Aggregate Power Control Tolerance for 2UL inter-band CA(6.3.5A.3.2)	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2291	1	Rel-12	F	RP-151707	R5-156058	approved	New TC of A-MPR for 2UL inter-band CA (6.2.4A.2)	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2292	1	Rel-12	F	RP-151707	R5-156098	approved	Revise Configured UE transmitted Output Power for 2UL intra-band contiguous CA test case 6.2.5A.1	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2293	1	Rel-12	F	RP-151707	R5-156059	approved	New TC of Additional spurious emissions for intra-band non-contiguous CA 6.6.3.3A.3	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-1	2294	1	Rel-12	F	RP-151687	R5-156133	approved	Correction to the appliable test release of 1.4MHz Bandwidth MBMS test	12.7.0	12.8.0	R5	TEI9_Test
36.521-1	2295	1	Rel-12	F	RP-151700	R5-156029	approved	Updates to 8.7.5 about TDD-FDD CA SDR performance test	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2297	1	Rel-12	F	RP-151709	R5-156063	approved	Addition of new TC 7.4_H Maximum input level for SCE-L1	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2298	1	Rel-12	F	RP-151709	R5-156064	approved	Addition of new TC 7.4A.1_H Maximum input level for SCE-L1 for CA (intra-band contiguous DL CA and UL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2299	1	Rel-12	F	RP-151709	R5-156065	approved	Addition of new TC 7.4A.2_H Maximum input level for SCE-L1for CA (intra-band contiguous DL CA without UL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2300	1	Rel-12	F	RP-151709	R5-156066	approved	Addition of new TC 7.4A.5_H Maximum input level for SCE-L1 for CA (3DL CA without UL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.521-1	2301	1	Rel-12	F	RP-151709	R5-156113	approved	Addition of new TC 8.2.1.4.1_H FDD PDSCH Closed Loop Multi Layer Spatial Multiplexing 2x2 for SCE-L1	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2302	1	Rel-12	F	RP-151709	R5-156114	approved	Addition of new TC 8.2.2.4.1_H TDD PDSCH Closed Loop Multi Layer Spatial Multiplexing 2x2 for SCE-L1	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2303	1	Rel-12	F	RP-151709	R5-156115	approved	Addition of new TC 8.3.1.1.1_H FDD PDSCH Single-layer Spatial Multiplexing on antenna ports 7 or 8 without a simultaneous transmission for SCE-L1 for eDL-MIMO	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2304	1	Rel-12	F	RP-151709	R5-156116	approved	Addition of new TC 8.3.2.1.2_H TDD PDSCH Single-layer Spatial Multiplexing on antenna ports 7 or 8 without a simultaneous transmission for eDL-MIMO for SCE-L1	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2305	1	Rel-12	F	RP-151709	R5-156117	approved	Addition of new TC 8.7.1.1_H FDD sustained data rate performance for SCE-L1	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2306	1	Rel-12	F	RP-151709	R5-156118	approved	Addition of new TC 8.7.1.1_H.2 FDD Sustained data rate performance for CA for SCE-L1 (2DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2307	1	Rel-12	F	RP-151709	R5-156119	approved	Addition of new TC 8.7.1.1_H.3 FDD Sustained data rate performance for CA for SCE-L1 (3DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2308	1	Rel-12	F	RP-151709	R5-156120	approved	Addition of new TC 8.7.2.1_H.1 TDD sustained data rate performance for SCE-L1 (Single Carrier)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2309	1	Rel-12	F	RP-151709	R5-156121	approved	Addition of new TC 8.7.2.1_H.2 TDD sustained data rate performance for CA for SCE-L1 (2DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2310	1	Rel-12	F	RP-151709	R5-156122	approved	Addition of new TC 8.7.2.1_H.3 TDD Sustained data rate performance for CA for SCE-L1 (3DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2311	1	Rel-12	F	RP-151709	R5-156183	approved	Addition of new TC 8.7.5.1_H.1 TDD FDD CA Sustained data rate performance for FDD PCell for SCE-L1 (2DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2312	1	Rel-12	F	RP-151709	R5-156124	approved	Addition of new TC 8.7.5.1_H.2 TDD FDD CA Sustained data rate performance for FDD PCell for SCE-L1 (3DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2313	1	Rel-12	F	RP-151709	R5-156125	approved	Addition of new TC 8.7.5.2_H.1 TDD FDD CA Sustained data rate performance for TDD PCell for SCE-L1 (2DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2314	1	Rel-12	F	RP-151709	R5-156126	approved	Addition of new TC 8.7.5.2_H.2 TDD FDD CA Sustained data rate performance for TDD PCell for SCE-L1 (3DL CA)	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-1	2315	1	Rel-12	F	RP-151706	R5-156043	approved	Update test requirement for MTC test cases: 7.6.1E, 7.6.2E and 7.6.3E	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2316	1	Rel-12	F	RP-151706	R5-156044	approved	Addition of Maximum Test System Uncertainty and Derivation of Test Requirements in Annex F for MTC test cases	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2317	1	Rel-12	F	RP-151706	R5-156045	approved	Additions to test case 6.2.3E - Maximum Power Reduction (MPR) for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2318	1	Rel-12	F	RP-151706	R5-155809	approved	Test case 6.2.4E – Additional Maximum Power Reduction (A-MPR) for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2320	1	Rel-12	F	RP-151706	R5-156046	approved	Additions to test case 6.3.2E – Minimum Output Power for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2321	1	Rel-12	F	RP-151706	R5-155810	approved	Additions to test case 6.3.3E – UE Transmit OFF Power for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.521-1	2322	1	Rel-12	F	RP-151706	R5-155811	approved	Additions to test case 6.3.4E.1 – General ON/OFF time mask for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2324	1	Rel-12	F	RP-151684	R5-156099	approved	Introduction of new A-MPR test with PUSCH frequency hopping	12.7.0	12.8.0	R5	TEI8_Test
36.521-1	2325	-	Rel-12	F	RP-151700	R5-155668	approved	Addition of CA configuration CA_2A-4A-5A in Reference sensitivity level for 3DL CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2326	-	Rel-12	F	RP-151706	R5-155670	approved	Correction to DL RMCs for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2327	1	Rel-12	F	RP-151700	R5-155860	approved	Correction of BW to be tested and CA Capability to be tested for TM3 Test Cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2328	1	Rel-12	F	RP-151700	R5-155861	approved	36.521-1 – CA_2A-12B updates	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2329	1	Rel-12	F	RP-151706	R5-155812	approved	Additions to test case 6.3.5E.1 – Power Control Absolute power tolerance for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2330	1	Rel-12	F	RP-151706	R5-155813	approved	Additions to test case 6.3.5E.2 – Power Control Relative power tolerance for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2331	-	Rel-12	F	RP-151689	R5-155709	approved	Editorial corrections to TC 8.2.2.1.1_A.1	12.7.0	12.8.0	R5	TEI10_Test
36.521-1	2332	1	Rel-12	F	RP-151706	R5-156047	approved	Additions to test case 6.3.5E.3 – Aggregate power control tolerance for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2333	1	Rel-12	F	RP-151706	R5-155814	approved	Additions to test case 6.5.1E – Frequency Error for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2334	1	Rel-12	F	RP-151706	R5-155815	approved	Additions to test case 6.5.2.1E.1 – Error Vector Magnitude for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2336	1	Rel-12	F	RP-151706	R5-155816	approved	Additions to test case 6.5.2.2E – Carrier Leakage for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2337	1	Rel-12	F	RP-151700	R5-156030	approved	36.521-1: CA_1A-3A-20A & CA_1A-7A-20A updates	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2338	1	Rel-12	F	RP-151706	R5-155817	approved	Additions to test case 6.5.2.3E – In-band emissions for non allocated RB for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2339	1	Rel-12	F	RP-151706	R5-155818	approved	Additions to test case 6.5.2.4E – EVM equalizer spectrum flatness for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2340	1	Rel-12	F	RP-151706	R5-156048	approved	Additions to test case 6.6.1E – Occupied bandwidth for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2341	1	Rel-12	F	RP-151706	R5-156049	approved	Additions to test case 6.6.2.1E – Spectrum Emission Mask for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2342	1	Rel-12	F	RP-151706	R5-155819	approved	Additions to test case 6.2.5E – Configurated Transmitted Power for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-1	2346	1	Rel-12	F	RP-151700	R5-156031	approved	Addition of 2x2 FDD-TDD CA test cases with TDD PCELL	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-1	2346 a	-	Rel-12	F	RP-151689	R5-155745	approved	Correction to CQI test cases for LTE CA	12.7.0	12.8.0	R5	TEI10_Test
36.521-2	0308	1	Rel-12	F	RP-151706	R5-156050	approved	Addition of applicability for newly introduced MTC RRM tests	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-2	0309	1	Rel-12	F	RP-151708	R5-155843	approved	Update of applicability of SU-MIMO conformance tests	12.7.0	12.8.0	R5	LTE_SUMIMO_RX-UEConTest
36.521-2	0313	1	Rel-12	F	RP-151712	R5-156093	approved	LTE Type B performance requirements - Addition of applicability for 6 new NAICS test cases	12.7.0	12.8.0	R5	LTE_NAICS-UEConTest

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.521-2	0314	-	Rel-12	F	RP-151707	R5-155275	approved	Introduction of applicabilities of 2 test cases for 2UL CA Tx test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-2	0315	1	Rel-13	F	RP-151714	R5-156087	approved	Introduction of test applicabilities for UL 64QAM cases	12.7.0	13.0.0	R5	LTE_UL64QAM-UEConTest
36.521-2	0316	-	Rel-12	F	RP-151689	R5-155301	approved	Introduction of test applicability for TC 6.6.2.2A.1	12.7.0	12.8.0	R5	TEI10_Test
36.521-2	0318	2	Rel-12	F	RP-151713	R5-156135	approved	Update of test applicabilities for R12 RRM cases in 36.521-2	12.7.0	12.8.0	R5	TEI12_Test
36.521-2	0319	-	Rel-12	F	RP-151684	R5-155318	approved	Update of UE categories for R8 in 36.521-2	12.7.0	12.8.0	R5	TEI8_Test
36.521-2	0320	-	Rel-12	F	RP-151689	R5-155319	approved	Update of UE categories for R10 in 36.521-2	12.7.0	12.8.0	R5	TEI10_Test
36.521-2	0322	-	Rel-12	F	RP-151696	R5-155323	approved	Update of UE categories for R11 in 36.521-2	12.7.0	12.8.0	R5	TEI11_Test
36.521-2	0323	1	Rel-12	F	RP-151700	R5-155870	approved	Applicability updates on inter-band CA receiver test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-2	0324	1	Rel-12	F	RP-151700	R5-155871	approved	Correction of applicability for FDD-TDD CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-2	0325	1	Rel-12	F	RP-151684	R5-156107	approved	Correction to test case condition for the test cases 9.5.1.x	12.7.0	12.8.0	R5	TEI8_Test
36.521-2	0326	-	Rel-12	F	RP-151687	R5-155544	approved	Correction to conditions C32 and C35 in Table 4.1-1 and Table 4.1-1a	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0327	-	Rel-12	F	RP-151687	R5-155545	approved	Correction to condiotions of Table 4.1-1a	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0328	-	Rel-12	F	RP-151687	R5-155556	approved	Correction of RRM Condition C77	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0329	-	Rel-12	F	RP-151687	R5-155558	approved	Correction of RRM Condition C79	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0330	-	Rel-12	F	RP-151687	R5-155560	approved	Correction of RRM Condition C80	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0331	1	Rel-12	F	RP-151707	R5-156060	approved	Addition of applicability for 2UL CA test cases 6.2.5A.3 and 6.2.5A.4	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-2	0332	-	Rel-12	F	RP-151687	R5-155563	approved	Correction of RRM Condition C81	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0333	1	Rel-12	F	RP-151707	R5-156061	approved	Addition of applicability for 2UL CA test cases 6.2.4A.3, 6.3.5A.3.2 and 6.6.3.3A.3	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-2	0334	-	Rel-12	F	RP-151687	R5-155565	approved	Correction of RRM Condition C82	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0335	1	Rel-12	F	RP-151700	R5-155873	approved	Introduction of applicability expression for new 3DL CA RRM tes case TC 8.16.41	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-2	0336	1	Rel-12	F	RP-151700	R5-155872	approved	Applicability update to FDD-TDD CA test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-2	0337	1	Rel-12	F	RP-151687	R5-156136	approved	Update of the 1.4MHz MBMS test applicability	12.7.0	12.8.0	R5	TEI9_Test
36.521-2	0338	2	Rel-12	F	RP-151709	R5-156132	approved	Applicability for new SCE-L1 test cases	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-2	0339	-	Rel-12	F	RP-151684	R5-155635	approved	Release indication corrections in table A.4.1-1: UE Radio Technologies	12.7.0	12.8.0	R5	TEI8_Test
36.521-2	0340	1	Rel-12	F	RP-151700	R5-155874	approved	36.521-2: CA_2A-2A-13A update	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-2	0341	-	Rel-12	F	RP-151706	R5-155750	approved	Addition of test cases in Table 4.1-1: Applicability of RF conformance test cases.	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-2	0342	-	Rel-12	F	RP-151706	R5-155777	approved	Test applicability for Intra Frequency RSRP Accuracy for UE category 0 Test Cases	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1250	1	Rel-12	F	RP-151706	R5-155820	approved	Introduction of new test case 6.1.8 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1251	1	Rel-12	F	RP-151706	R5-156051	approved	Introduction of new test case 8.1.11 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1252	1	Rel-12	F	RP-151706	R5-155821	approved	Introduction of new test case 8.1.12 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1253	1	Rel-12	F	RP-151706	R5-155822	approved	Introduction of new test case 8.1.13 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest

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36.521-3	1254	1	Rel-12	F	RP-151706	R5-155823	approved	Introduction of new test case 8.1.17 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1255	1	Rel-12	F	RP-151706	R5-155824	approved	Introduction of new test case 8.1.18 MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1256	1	Rel-12	F	RP-151684	R5-155805	approved	Update minimum requirements for test case 8.1.1	12.7.0	12.8.0	R5	TEI8_Test
36.521-3	1257	1	Rel-12	F	RP-151707	R5-155881	approved	Updated to TC 7.1.4A	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-3	1258	-	Rel-12	F	RP-151687	R5-155108	approved	Correction to test procedure of inter-frequency autonomous gaps test cases	12.7.0	12.8.0	R5	TEI9_Test
36.521-3	1259	1	Rel-12	F	RP-151706	R5-155825	approved	Adding new MTC handover test case 5.1.10	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1260	1	Rel-12	F	RP-151706	R5-155826	approved	Adding new MTC handover test case 5.1.11	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1261	1	Rel-12	F	RP-151706	R5-155827	approved	Adding new MTC handover test case 5.1.12	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1262	-	Rel-12	F	RP-151706	R5-155134	approved	Updating Annex E and F with newly introduced test cases for MTC	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1263	-	Rel-12	F	RP-151706	R5-155135	approved	Adding RMCs for MTC to Annex A	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1264	-	Rel-12	F	RP-151706	R5-155136	approved	Adding abbreviations and SS HD-FDD testing information	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1265	1	Rel-12	F	RP-151713	R5-155806	approved	Updating and aligning of RMC tables in TS36.521-3	12.7.0	12.8.0	R5	TEI12_Test
36.521-3	1266	-	Rel-12	F	RP-151687	R5-155139	approved	Uncertainties and Test tolerances for Test cases 4.3.2 and 4.3.4.2	12.7.0	12.8.0	R5	TEI9_Test
36.521-3	1267	-	Rel-12	F	RP-151684	R5-155141	approved	Uncertainties and Test tolerances for Test cases 4.4.1 and 4.4.2	12.7.0	12.8.0	R5	TEI8_Test
36.521-3	1268	-	Rel-12	F	RP-151684	R5-155143	approved	Uncertainties and Test tolerances for Test cases 4.5.1.1 and 4.5.2.1	12.7.0	12.8.0	R5	TEI8_Test
36.521-3	1269	-	Rel-12	F	RP-151689	R5-155145	approved	Uncertainties and Test tolerances for Test case 8.20.2A	12.7.0	12.8.0	R5	TEI10_Test
36.521-3	1270	-	Rel-12	F	RP-151689	R5-155147	approved	Uncertainties and Test tolerances for Test case 8.20.4A	12.7.0	12.8.0	R5	TEI10_Test
36.521-3	1271	-	Rel-12	F	RP-151689	R5-155149	approved	Uncertainties and Test tolerances for Test case 8.20.4B	12.7.0	12.8.0	R5	TEI10_Test
36.521-3	1272	1	Rel-12	F	RP-151706	R5-155828	approved	Adding new MTC FD-FDD RLM test case for out-of-sync and definition update	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1273	1	Rel-12	F	RP-151706	R5-155829	approved	Adding new MTC FD-FDD RLM test case for in-sync	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1274	1	Rel-12	F	RP-151706	R5-155830	approved	Adding new MTC FD-FDD RLM test case for out-of-sync in DRX	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1275	1	Rel-12	F	RP-151706	R5-155831	approved	Adding new MTC FD-FDD RLM test case for in-sync in DRX	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1276	1	Rel-12	F	RP-151706	R5-155832	approved	Adding new MTC HD-FDD RLM test case for out-of-sync	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1277	1	Rel-12	F	RP-151706	R5-155833	approved	Adding new MTC HD-FDD RLM test case for in-sync	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1278	1	Rel-12	F	RP-151706	R5-155834	approved	Adding new MTC HD-FDD RLM test case for out-of-sync in DRX	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1279	1	Rel-12	F	RP-151706	R5-155835	approved	Adding new MTC HD-FDD RLM test case for in-sync in DRX	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1280	1	Rel-12	F	RP-151706	R5-155836	approved	Adding new MTC TDD RLM test case for out-of-sync	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1281	1	Rel-12	F	RP-151706	R5-155837	approved	Adding new MTC TDD RLM test case for in-sync	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1282	1	Rel-12	F	RP-151706	R5-155838	approved	Adding new MTC TDD RLM test case for out-of-sync in DRX	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1283	1	Rel-12	F	RP-151706	R5-155839	approved	Adding new MTC TDD RLM test case for in-sync in DRX	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1284	1	Rel-12	F	RP-151700	R5-155862	approved	Update to RSRP accuracy test cases for FDD-TDD CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest

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36.521-3	1285	1	Rel-12	F	RP-151689	R5-155888	approved	Update RSRQ and reported values for serving cell Intra Frequency Absolute RSRQ Accuracy Test cases	12.7.0	12.8.0	R5	TEI10_Test
36.521-3	1286	-	Rel-12	F	RP-151707	R5-155197	approved	Uncertainties and Test Tolerance for E-UTRAN TDD – UE Timing Advanced Adjustment Accuracy Test for SCell in sTAG	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-3	1287	1	Rel-12	F	RP-151689	R5-155889	approved	Uncertainties and Test Tolerances for 2DL CA activation and deactivation of known SCell in non-DRX Test cases	12.7.0	12.8.0	R5	TEI10_Test
36.521-3	1288	1	Rel-12	F	RP-151700	R5-155878	approved	Uncertainties and Test Tolerances for 3DL CA Event Triggered Reporting under Deactivated SCells in Non-DRX Test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1289	1	Rel-12	F	RP-151700	R5-156032	approved	Uncertainties and Test Tolerances for 3DL E-UTRA for Carrier Aggregation RSRP Accuracy Test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1290	1	Rel-12	F	RP-151700	R5-155879	approved	Uncertainties and Test Tolerances for 3DL E-UTRA for Carrier Aggregation RSRQ Accuracy Test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1291	1	Rel-12	F	RP-151706	R5-156053	approved	Add new LC MTC test case 6.1.6 E-UTRAN FD-FDD Intra-frequency RRC Re-establishment for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1292	1	Rel-12	F	RP-151706	R5-156054	approved	Add new LC MTC test case 6.1.7 E-UTRAN HD-FDD Intra-frequency RRC Re-establishment for UE category 0category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1293	1	Rel-12	F	RP-151706	R5-155896	approved	Add new LC MTC test case 8.1.19 E-UTRAN FD - FDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1294	1	Rel-12	F	RP-151706	R5-155897	approved	Add new LC MTC test case 8.1.20 E-UTRAN FDD - FDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps with DRX for UE category 0.	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1295	1	Rel-12	F	RP-151706	R5-155898	approved	Add new LC MTC test case 8.1.21 E-UTRAN HD - FDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1296	1	Rel-12	F	RP-151706	R5-155899	approved	Add new LC MTC test case 8.1.22 E-UTRAN HD - FDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps with DRX for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1297	-	Rel-12	F	RP-151684	R5-155270	approved	Correction to test case 7.1.2	12.7.0	12.8.0	R5	TEI8_Test
36.521-3	1298	1	Rel-12	F	RP-151707	R5-156009	approved	Update Test applicability for test case 7.1.7 and 7.2.5	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.521-3	1299	1	Rel-12	F	RP-151700	R5-155863	approved	Update of message contents for 3DL CA RSRP and RSRQ Accuracy tests	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1301	2	Rel-12	F	RP-151696	R5-156137	approved	Update of test applicabilities for R12 RRM cases in 36.521-3	12.7.0	12.8.0	R5	TEI11_Test
36.521-3	1304	-	Rel-12	F	RP-151706	R5-155399	approved	Addition of cell configuration mapping for newly introduced MTC tests	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1305	-	Rel-12	F	RP-151700	R5-155427	approved	Uncertainties and Test Tolerances for 3DL FDD RSRP for E-UTRAN in Carrier Aggregation	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1307	-	Rel-12	F	RP-151700	R5-155429	approved	Update to 3DL PCell in FDD RSRQ for E-UTRAN in Carrier Aggregation	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1308	1	Rel-12	F	RP-151700	R5-156033	approved	Update of Annex E for 3DL CA RRM	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1309	1	Rel-12	F	RP-151700	R5-155864	approved	Correction to test applicability in 3DL CA RRM test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1310	-	Rel-12	F	RP-151700	R5-155437	approved	Removable of wait time after activation of Scell	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest

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36.521-3	1311	1	Rel-12	F	RP-151700	R5-156034	approved	Correction to 3DL CA RSRP/RSRQ test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1313	1	Rel-12	F	RP-151700	R5-156128	approved	Correction to message contents for RRM 3DL CA TC 9.2.41	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1314	1	Rel-12	F	RP-151700	R5-156129	approved	Corrections to message contents for RRM 3DL CA TCs 8.16.27+8.16.28	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1315	1	Rel-12	F	RP-151700	R5-155866	approved	Clarification on frequency swapping and references to connection diagrams in 3DL CA RRM test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1316	1	Rel-12	F	RP-151700	R5-155867	approved	Addition of missing applicability release to test case 9.2.39	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1319	-	Rel-12	F	RP-151689	R5-155574	approved	Incorrect Io values for eICIC tests	12.7.0	12.8.0	R5	TEI10_Test
36.521-3	1320	1	Rel-12	F	RP-151700	R5-155868	approved	Introduction of new 3DL CA RRM test case TC 8.16.41 “3 DL FDD CA activation and deactivation of unknown SCell in non-DRX”	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1321	1	Rel-12	F	RP-151700	R5-155880	approved	Uncerts and Test Tols for TCs 8.16.31+8.16.32+8.16.33+8.16.34 36.521-3 CR	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1322	1	Rel-12	F	RP-151709	R5-156067	approved	Addition of new SCE-L1 RRM TC 8.22.1 E-UTRAN FDD-FDD intra-frequency event triggered reporting under fading propagation conditions in synchronous cells in DRX based on CRS based discovery signal	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-3	1323	1	Rel-12	F	RP-151709	R5-156068	approved	Addition of new SCE-L1 RRM TC 8.22.2 E-UTRAN TDD-TDD intra-frequency event triggered reporting under fading propagation conditions in synchronous cells in DRX based on CRS based discovery signal	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-3	1324	1	Rel-12	F	RP-151709	R5-156069	approved	Addition of new SCE-L1 RRM TC 8.22.3 E-UTRAN FDD-FDD inter-frequency event triggered reporting under fading propagation conditions in DRX based on CRS based discovery signal	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-3	1325	1	Rel-12	F	RP-151709	R5-156070	approved	Addition of new SCE-L1 RRM TC 8.22.4 E-UTRAN TDD-TDD inter-frequency event triggered reporting under fading propagation conditions in DRX based on CRS based discovery signal	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.521-3	1326	1	Rel-12	F	RP-151705	R5-156015	approved	Addition of UE transmit timing accuracy test case for PRoSe Direct discovery.	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.521-3	1327	1	Rel-12	F	RP-151700	R5-155869	approved	Updating 3DL CA test cases 8.16.29 and 8.16.30	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1328	-	Rel-12	F	RP-151700	R5-155680	approved	Adding new RRM test case 8.16.35 for 3DL CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1329	-	Rel-12	F	RP-151700	R5-155681	approved	Adding new RRM test case 8.16.36 for 3DL CA	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.521-3	1330	-	Rel-12	F	RP-151706	R5-155770	approved	Introduction of test case 9.1.41.1 - FD-FDD Intra Frequency Absolute RSRP Accuracy for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1331	-	Rel-12	F	RP-151706	R5-155771	approved	Introduction of test case 9.1.41.2 - FD-FDD Intra Frequency Relative RSRP Accuracy for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1332	-	Rel-12	F	RP-151706	R5-155772	approved	Introduction of test case 9.1.42.1 - HD-FDD Intra Frequency Absolute RSRP Accuracy for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1333	-	Rel-12	F	RP-151706	R5-155773	approved	Introduction of test case 9.1.42.2 - HD-FDD Intra Frequency Relative RSRP Accuracy for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest

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36.521-3	1334	-	Rel-12	F	RP-151706	R5-155774	approved	Introduction of test case 9.1.43.1 - TDD Intra Frequency Absolute RSRP Accuracy for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1335	-	Rel-12	F	RP-151706	R5-155775	approved	Introduction of test case 9.1.43.2 - TDD Intra Frequency Relative RSRP Accuracy for UE category 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.521-3	1336	-	Rel-12	F	RP-151706	R5-155776	approved	Introduction of cell configuration mapping for Intra Frequency RSRP Accuracy for UE category 0 Test Cases	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.523-1	3145	1	Rel-12	F	RP-151685	R5-155781	approved	Corrections to MFBI test case 6.1.2.22	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3147	-	Rel-12	F	RP-151685	R5-155080	approved	Correction to GCF WI-87 GERAN-LTE cell reselection test cases 6.2.3.27	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3148	1	Rel-12	F	RP-151685	R5-155794	approved	Update test case 9.2.1.1.28	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3149	1	Rel-12	F	RP-151685	R5-155795	approved	Update test case 9.2.1.1.28a	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3150	1	Rel-12	F	RP-151696	R5-155798	approved	Correction to Table 9.2.1.2.4.3.3-5: Message ATTACH REQUEST of Test Case 9.2.1.2.4 to reflect TS 24.008 Rel-11 changes	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3151	1	Rel-12	F	RP-151696	R5-155983	approved	Correction to eMDT test cases 8.6.8.x and 8.6.9.x	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3152	1	Rel-12	F	RP-151706	R5-155935	approved	Update of MAC test case 7.1.4.15 for UE Cat 0	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.523-1	3153	1	Rel-12	F	RP-151685	R5-155936	approved	Update of MAC test case 7.1.4.16 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3154	1	Rel-12	F	RP-151685	R5-155937	approved	Update of MAC test case 7.1.4.21 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3161	1	Rel-12	F	RP-151685	R5-155938	approved	Update of MAC test case 7.1.4.7a for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3162	1	Rel-12	F	RP-151710	R5-155947	approved	New Dual Connectivity test case 7.3.7.1 for PDCP Uplink Routing / Split DRB	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.523-1	3163	1	Rel-12	F	RP-151714	R5-155942	approved	Update of MAC test case 7.1.7.2.1 for LTE 64QAM UL	12.7.0	12.8.0	R5	LTE_UL64QAM-UEConTest
36.523-1	3165	1	Rel-12	F	RP-151685	R5-155978	approved	Corrections to LTE CSG Idle mode testcases	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3166	1	Rel-12	F	RP-151687	R5-155904	approved	Correction to LTE CSG testcase 11.2.3	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3167	1	Rel-12	F	RP-151685	R5-155799	approved	Correction to LTE CSG test case 9.2.3.1.9	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3168	1	Rel-12	F	RP-151687	R5-155786	approved	Corrections to LTE CSG test case 8.3.4.2	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3169	1	Rel-12	F	RP-151701	R5-155963	approved	Correction 3GPP-WLAN interworking test case 6.5.5	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-1	3170	1	Rel-12	F	RP-151701	R5-155964	approved	Correction of Beacon RSSI parameters in test case 6.5.6	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-1	3171	1	Rel-12	F	RP-151706	R5-155939	approved	Update to title of MAC MTC test case 7.1.1.1a	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.523-1	3172	1	Rel-12	F	RP-151701	R5-155965	approved	Correction of Beacon RSSI parameters in test case 8.4.8.3	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-1	3173	1	Rel-12	F	RP-151706	R5-155940	approved	Update to title of MTC test case 7.1.1.1a in 36.523-2	12.7.0	12.8.0	R5	LC_MTC_LTE-UEConTest
36.523-1	3174	1	Rel-12	F	RP-151701	R5-155966	approved	Addition of new WLAN interworking test case for RRC Idle Mode	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-1	3175	1	Rel-12	F	RP-151701	R5-155967	approved	Addition of new WLAN interworking test case for RRC Connected Mode	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.523-1	3176	1	Rel-12	F	RP-151685	R5-155984	approved	Optimization of EPS attach test case 9.2.1.1.13	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3177	-	Rel-12	F	RP-151685	R5-155357	approved	[PTCO] Implicit testing: Test title corrections for Clause 8	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3178	-	Rel-12	F	RP-151685	R5-155358	approved	[PTCO] Implicit testing: Test title corrections for Clause 9	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3179	1	Rel-12	F	RP-151710	R5-155948	approved	Addition of TC 8.2.2.9.5 Dual Connectivity test case for RRC connection reconfiguration / SCG change without handover / Split DRB modification within the same PSCell	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.523-1	3181	2	Rel-12	F	RP-151687	R5-155985	approved	Correction to Test Case 9.1.3.3	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3182	1	Rel-12	F	RP-151685	R5-155979	approved	Correction to Test Case 6.3.4	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3183	1	Rel-12	F	RP-151687	R5-155980	approved	Correction to Test Case 6.4.6	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3184	1	Rel-12	F	RP-151709	R5-155970	approved	Addition of new TC 7.1.7.1.8 SCE-L1 / DL-SCH transport block size selection / DCI format 1 / RA type 1	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.523-1	3185	1	Rel-12	F	RP-151709	R5-155971	approved	Addition of new TC 7.1.7.1.9 SCE-L1 / DL-SCH transport block size selection / DCI format 1A / RA type 2 / Localised VRB	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.523-1	3186	1	Rel-12	F	RP-151709	R5-155972	approved	Addition of new TC 7.1.7.1.10 SCE-L1 / DL-SCH transport block size selection / DCI format 1A / RA type 2 / Distributed VRB	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.523-1	3187	1	Rel-12	F	RP-151705	R5-155923	approved	Addition of new D2D test case 8.8.1.5 for successful monitoring for SyncRef UE/Direct Communication	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3188	1	Rel-12	F	RP-151705	R5-155924	approved	Addition of new D2D test case 8.8.2.5 for successful monitoring for SyncRef UE/Direct Discovery	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3189	-	Rel-12	F	RP-151705	R5-155433	approved	Adding main clause 8.8, 8.8.1 for Direct Communication and 8.8.2 for Direct Discovery	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3190	-	Rel-12	F	RP-151688	R5-155455	approved	Correction to RRC CA test case 8.2.4.16.1	12.7.0	12.8.0	R5	TEI10_Test
36.523-1	3191	-	Rel-12	F	RP-151696	R5-155487	approved	Correction to EMM test case 9.2.3.1.8a	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3192	-	Rel-12	F	RP-151685	R5-155488	approved	Correction to various ESM test cases for IP address allocation	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3194	1	Rel-12	F	RP-151688	R5-155789	approved	Correction to MDT test case 8.6.4.4	12.7.0	12.8.0	R5	TEI10_Test
36.523-1	3195	-	Rel-12	F	RP-151696	R5-155492	approved	Correction to SIMTC test case 10.5.1b	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3196	1	Rel-12	F	RP-151696	R5-155790	approved	Correction to MDT test case 8.6.2.3a	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3197	-	Rel-12	F	RP-151687	R5-155494	approved	Correction to eMBMS test case 17.2.4	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3198	-	Rel-12	F	RP-151696	R5-155495	approved	AP#68.02: Correction to Rel-11 eMBMS test cases	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3199	1	Rel-12	F	RP-151696	R5-155782	approved	Correction to MAC CA test cases 7.1.3.11.1, 7.1.3.11.4 and 7.1.3.11.5	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3200	1	Rel-12	F	RP-151696	R5-155986	approved	Correction to Rel-11 SIMTC test case 9.2.3.1.8b	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3201	1	Rel-12	F	RP-151685	R5-155981	approved	Update of RLC Test Case 7.2.2.5.1	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3202	-	Rel-12	F	RP-151685	R5-155522	approved	Correction to Cell selection test case 6.1.2.3	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3203	1	Rel-12	F	RP-151705	R5-155925	approved	Correction to TC8.8.2.1	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3204	-	Rel-12	F	RP-151685	R5-155525	approved	Correction to Cell reselection test case 6.1.2.6	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3205	-	Rel-12	F	RP-151685	R5-155526	approved	Correction to Measurement reporting test case 8.3.1.4	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3206	-	Rel-12	F	RP-151687	R5-155527	approved	Correction to EUTRA measurement test cases 8.3.1.13 and 8.3.1.13a	12.7.0	12.8.0	R5	TEI9_Test

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.523-1	3207	1	Rel-12	F	RP-151687	R5-155988	approved	Adding TC 13.1.19 and 13.1.20 for emergency call via CS domain	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3209	-	Rel-12	F	RP-151687	R5-155533	approved	Moving Rel-9 SSAC test descriptions into 36.523-1	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3210	-	Rel-12	F	RP-151713	R5-155534	approved	Moving Rel-12 SSAC test descriptions into 36.523-1	12.7.0	12.8.0	R5	TEI12_Test
36.523-1	3211	1	Rel-12	F	RP-151713	R5-155787	approved	Correction to SI acquisition TCs	12.7.0	12.8.0	R5	TEI12_Test
36.523-1	3212	1	Rel-12	F	RP-151713	R5-155905	approved	Update eMBMS test case 17.3.2	12.7.0	12.8.0	R5	TEI12_Test
36.523-1	3214	1	Rel-12	F	RP-151685	R5-155944	approved	[PTCO] Implicit Testing: Removal of TC 8.1.2.1 update of 8.1.1.3	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3217	1	Rel-12	F	RP-151688	R5-155784	approved	Correction to the testcase 8.2.4.20.x	12.7.0	12.8.0	R5	TEI10_Test
36.523-1	3219	1	Rel-12	F	RP-151688	R5-155791	approved	Correction to eMDT testcase 8.6.7.1	12.7.0	12.8.0	R5	TEI10_Test
36.523-1	3220	-	Rel-12	F	RP-151688	R5-155620	approved	Correction to LTE-A MAC test cases 7.1.3.11.x	12.7.0	12.8.0	R5	TEI10_Test
36.523-1	3221	-	Rel-12	F	RP-151687	R5-155624	approved	Update of IMS Emergency Call test case 11.2.6	12.7.0	12.8.0	R5	TEI9_Test
36.523-1	3222	1	Rel-12	F	RP-151696	R5-156150	approved	Correction to LTE-A rSRVCC test cases	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3223	1	Rel-12	F	RP-151696	R5-155785	approved	Corrections to eDDA testcases 8.2.2.6.1 and 8.2.2.6.2	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3224	1	Rel-12	F	RP-151710	R5-155949	approved	Addition of Dual Connectivity RRC test case	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.523-1	3225	2	Rel-12	F	RP-151685	R5-156138	approved	Extension of TC 8.5.4.1 for Multi PDN configuration	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3226	1	Rel-12	F	RP-151685	R5-156152	approved	Clarification to EMM test case 9.3.1.16 for IMS enabled UEs	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3227	-	Rel-12	F	RP-151685	R5-155638	approved	Correction to ESM test case 10.2.1	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3228	1	Rel-12	F	RP-151710	R5-155950	approved	Addition of Dual Connectivity RRC test case 8.2.4.25.2	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.523-1	3229	1	Rel-12	F	RP-151705	R5-155926	approved	Addition of ProSe Direct Communication test case 19.1.6	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3230	1	Rel-12	F	RP-151705	R5-155927	approved	Addition of ProSe Direct Communication test case 19.1.10	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3231	1	Rel-12	F	RP-151705	R5-155929	approved	Correction to ProSe Direct Communication test case 19.1.4	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3232	1	Rel-12	F	RP-151705	R5-155930	approved	Correction to ProSe Direct Communication test case 19.1.5	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3234	1	Rel-12	F	RP-151685	R5-155902	approved	Correction to GCF WI-087 EUTRA EMM testcase 9.2.3.3.5	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3235	1	Rel-12	F	RP-151685	R5-155783	approved	Update 7.1.7.x test cases with UE Category 11 and 12 information	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3236	1	Rel-12	F	RP-151705	R5-155932	approved	Correction to testcase 19.2.4 Successful EPC-LEVEL ProSe Discovery	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3237	1	Rel-12	F	RP-151685	R5-155987	approved	Correction to GCF WI-082 EUTRA Testcase 9.1.5.1	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3238	-	Rel-12	F	RP-151685	R5-155661	approved	Correction to test case 7.1.7.1.6	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3239	1	Rel-12	F	RP-151710	R5-155951	approved	Add test case 8.2.2.9.1 for dual connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.523-1	3241	1	Rel-12	F	RP-151710	R5-155952	approved	Add test case 8.2.2.9.2 for dual connectivity	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.523-1	3244	-	Rel-12	F	RP-151701	R5-155683	approved	Editorial Correction of clause 8.4	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-1	3245	-	Rel-12	F	RP-151701	R5-155684	approved	Editorial Correction of clause 6.5	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-1	3247	1	Rel-12	F	RP-151701	R5-155968	approved	Addition of new test case - WLAN Offload / T350 expiry	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest

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36.523-1	3248	1	Rel-12	F	RP-151701	R5-155969	approved	Addition of new test case - WLAN Offload / Offload Success / EUTRA RRC_Connected to/from WLAN (ANDSF and RAN rules co-existence)	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-1	3249	1	Rel-12	F	RP-151711	R5-155955	approved	New UEPCOP test case 9.2.1.1.7c Attach / Success / PSM	12.7.0	12.8.0	R5	MTCe-UEPCOP-UEConTest
36.523-1	3253	1	Rel-12	F	RP-151705	R5-155933	approved	Addition of new D2D test case for Successful ProSe Direct Communication/Limited Service state	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-1	3254	1	Rel-12	F	RP-151696	R5-155792	approved	Corrections to eMDT test case 8.6.5.1a	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3255	1	Rel-12	F	RP-151696	R5-155793	approved	Corrections to eMDT test case 8.6.7.4	12.7.0	12.8.0	R5	TEI11_Test
36.523-1	3256	1	Rel-12	F	RP-151685	R5-156153	approved	Update of RLC test case 7.2.2.6 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3257	1	Rel-12	F	RP-151685	R5-156154	approved	Update of RLC test case 7.2.2.7 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3258	1	Rel-12	F	RP-151685	R5-156155	approved	Update of RLC test case 7.2.3.2 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3259	1	Rel-12	F	RP-151685	R5-156156	approved	Update of RLC test case 7.2.3.10 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3260	1	Rel-12	F	RP-151685	R5-156157	approved	Update of RLC test case 7.2.3.13 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3261	1	Rel-12	F	RP-151685	R5-156158	approved	Update of RLC test case 7.2.3.15 for UE Cat 0	12.7.0	12.8.0	R5	TEI8_Test, LC_MTC_LTE-UEConTest
36.523-1	3262	-	Rel-12	F	RP-151685	R5-155991	approved	Correction to EMM test case 9.3.1.4 for IMS enabled Ues	12.7.0	12.8.0	R5	TEI8_Test
36.523-1	3263	-	Rel-12	F	RP-151685	R5-155992	approved	Correction to ESM test case 10.5.3 for IMS enabled Ues	12.7.0	12.8.0	R5	TEI8_Test
36.523-2	0789	1	Rel-12	F	RP-151710	R5-155953	approved	Applicability of new protocol Dual Connectivity test cases	12.7.0	12.8.0	R5	LTE_SC_enh_dualC-UEConTest
36.523-2	0790	1	Rel-12	F	RP-151705	R5-155934	approved	Add UE implementation capability for ProSe	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-2	0791	-	Rel-12	F	RP-151701	R5-155347	approved	Addition of applicability for new WLAN interworking test cases	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-2	0792	-	Rel-12	F	RP-151688	R5-155364	approved	Correction to “Release other RAT” for CA test case 8.4.2.7.1, 8.4.2.7.2 & 8.4.2.7.3	12.7.0	12.8.0	R5	TEI10_Test
36.523-2	0793	1	Rel-12	F	RP-151709	R5-155973	approved	Addition of applicability for new SCE-L1 test cases 7.1.7.1.8, 7.1.7.1.9 and 7.1.7.1.10	12.7.0	12.8.0	R5	LTE_SC_enh_L1-UEConTest
36.523-2	0794	-	Rel-12	F	RP-151705	R5-155432	approved	Addition of applicability for new D2D test cases 8.8.1.5 and 8.8.2.5	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-2	0797	-	Rel-12	F	RP-151685	R5-155621	approved	[PTCO] Voiding TC 8.1.2.1 in applicability table	12.7.0	12.8.0	R5	TEI8_Test
36.523-2	0798	-	Rel-12	F	RP-151685	R5-155622	approved	[PTCO] Repairing error when attempting to remove 9.2.1.1.21	12.7.0	12.8.0	R5	TEI8_Test
36.523-2	0799	1	Rel-12	F	RP-151685	R5-155906	approved	Correction to C56 selection expression to remove redundant PICS for Category 6 to Category10	12.7.0	12.8.0	R5	TEI8_Test
36.523-2	0801	-	Rel-12	F	RP-151701	R5-155682	approved	Addition of applicability of new 3GPP/WLAN test case	12.7.0	12.8.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-2	0802	1	Rel-12	F	RP-151711	R5-155956	approved	Addition of applicability statements for new UEPCOP test case	12.7.0	12.8.0	R5	MTCe-UEPCOP-UEConTest
36.523-2	0803	-	Rel-12	F	RP-151688	R5-155711	approved	Editorial Correction to pics declaration for standalone GNSS location information	12.7.0	12.8.0	R5	TEI10_Test

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36.523-2	0804	-	Rel-12	F	RP-151705	R5-155723	approved	Addition of applicability for new D2D test case on Successful ProSe Direct Communication/Limited Service state	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-2	0805	1	Rel-12	F	RP-151700	R5-155911	approved	36.523-2: CA_2A-2A-13A editorial update	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.523-2	0807	-	Rel-12	F	RP-151714	R5-155753	approved	Addition of ICS for support of 64QAM in UL	12.7.0	12.8.0	R5	LTE_UL64QAM-UEConTest
36.523-2	0809	-	Rel-12	F	RP-151688	R5-155908	approved	Correction to execution guideline of 7.1.3.11.2	12.7.0	12.8.0	R5	TEI10_Test
36.523-2	0810	-	Rel-12	F	RP-151705	R5-155941	approved	Addition of applicability for new Direct Communication test cases	12.7.0	12.8.0	R5	LTE_D2D_Prox-UEConTest
36.523-2	0811	-	Rel-12	F	RP-151685	R5-156162	approved	Update the applicabity of loopback mode test cases for Multi-PDN	12.7.0	12.8.0	R5	TEI8_Test
36.523-2	0812	-	Rel-12	F	RP-151687	R5-156139	approved	Addition of new applicability of Emergency call via CS domain TCs for IMS capable UE	12.7.0	12.8.0	R5	TEI9_Test
36.523-3	2904	-	Rel-11	F	RP-151696	R5-155040	approved	Removal of technical content in 36.523-3 v11.6.0 and substitution with pointer to the next Release	11.6.0	11.7.0	R5	TEI11_Test
36.523-3	2906	-	Rel-12	F	RP-151706	R5-155055	approved	Low-cost MTC: Test Model enhancement for half-duplex FDD Cat.0 UEs	12.3.0	12.4.0	R5	LC_MTC_LTE-UEConTest
36.523-3	2907	-	Rel-12	F	RP-151701	R5-155057	approved	3GPP / WLAN Radio Interworking: Introduction of Test Model	12.3.0	12.4.0	R5	UTRA_LTE_WLAN_interw-UEConTest
36.523-3	2908	-	Rel-12	F	RP-151705	R5-155058	approved	D2D ProSe: Introduction of Test Model	12.3.0	12.4.0	R5	LTE_D2D_Prox-UEConTest
36.523-3	2909	1	Rel-12	F	RP-151687	R5-155909	approved	Editorial update of Guidelines of EUTRA MFBI test cases	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2911	1	Rel-12	F	RP-151685	R5-156151	approved	Routine maintenance for TS 36.523-3	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2912	-	Rel-12	F	RP-151695	R5s150694	approved	LTE_TDD: Addition of GCF WI-201 LTE-A eICIC test case 8.3.1.21 ^^(… new test model with OCNG simulation in non-ABS subframes)	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2913	-	Rel-12	B	RP-151695	R5s150704	approved	Addition of Rel-11 EUTRA<>UTRA rSRVCC test case 13.4.3.32	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2914	-	Rel-12	F	RP-151695	R5s150741	approved	Correction to IMS SIP De-registration procedure for xSRVCC test cases	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2915	-	Rel-12	B	RP-151695	R5s150751	approved	Addition of Rel-11 EUTRA<>UTRA rSRVCC test case 13.4.3.34	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2916	-	Rel-12	F	RP-151695	R5s150771	approved	Correction of Cell reselection test case 6.1.2.3	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2917	-	Rel-12	F	RP-151695	R5s150772	approved	Correction of Intra E-UTRAN measurement test case 8.3.1.4	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2918	-	Rel-12	F	RP-151695	R5s150774	approved	Correction to GCF WI-0150 EUTRA RRC test case 8.5.1.6	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2919	-	Rel-12	F	RP-151695	R5s150777	approved	Correction to GCF WI-082 SMS over SGs test cases 11.1.3, 11.1.4, 11.1.5, 11.1.6	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2920	-	Rel-12	B	RP-151695	R5s150778	approved	Addition of Rel-11 LTE-A SIMTC test case 10.5.1b	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2921	-	Rel-12	B	RP-151695	R5s150782	approved	Addition of LTE-A 2x UL Carrier Aggregation test case 8.2.2.7.2	12.3.0	12.4.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.523-3	2922	-	Rel-12	B	RP-151695	R5s150784	approved	LTE_TDD: Addition of LTE-A 2x UL Carrier Aggregation test case 8.2.2.7.2	12.3.0	12.4.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.523-3	2923	-	Rel-12	B	RP-151695	R5s150787	approved	Addition of LTE-A 2UL Carrier Aggregation MAC test case 7.1.4.19.2	12.3.0	12.4.0	R5	LTE_CA_Rel12_2UL-UEConTest

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.523-3	2924	-	Rel-12	B	RP-151695	R5s150789	approved	LTE_TDD: Addition of LTE-A 2UL Carrier Aggregation MAC test case 7.1.4.19.2	12.3.0	12.4.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.523-3	2925	-	Rel-12	B	RP-151695	R5s150790	approved	LTE_TDD: Addition of LTE-A 2x UL Carrier Aggregation test case 8.2.2.7.3	12.3.0	12.4.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.523-3	2926	-	Rel-12	F	RP-151695	R5s150793	approved	Correction to LTE-A RRC CA test cases 8.3.1.18.1, 8.3.1.18.2 and 8.3.1.18.3	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2927	-	Rel-12	F	RP-151695	R5s150794	approved	Correction to GCF WI-082 EMM test case 9.2.1.2.4	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2928	-	Rel-12	F	RP-151695	R5s150796	approved	Correction to GEA4 and A5/4 Ciphering Algorithm Implementation	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2929	-	Rel-12	B	RP-151695	R5s150797	approved	Addition of LTE-A 2UL Carrier Aggregation RACH on SCell test case 7.1.2.10.2	12.3.0	12.4.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.523-3	2930	-	Rel-12	F	RP-151695	R5s150799	approved	Correction to GCF WI-172 aSRVCC test case 13.4.3.8	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2931	-	Rel-12	F	RP-151695	R5s150801	approved	Correction to EUTRA Idle-mode test case 6.1.2.3a	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2932	-	Rel-12	F	RP-151695	R5s150802	approved	Correction to GCF WI-081 EUTRA Idle Mode test case 6.1.1.1b	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2933	-	Rel-12	F	RP-151695	R5s150803	approved	Correction to LTE UTRA CSG test case 6.3.3	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2934	-	Rel-12	F	RP-151695	R5s150804	approved	Correction to LTE-UTRA CSG test case 6.3.4	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2935	-	Rel-12	F	RP-151695	R5s150806	approved	Correction to GCF WI-082 ESM test case 10.2.1	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2936	-	Rel-12	F	RP-151695	R5s150807	approved	Correction to LTE-A (Rel-11) rSRVCC test case 13.4.3.34	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2937	-	Rel-12	F	RP-151695	R5s150808	approved	Correction of 7.1.7.1.x and 7.1.7.2.1 test cases	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2938	-	Rel-12	B	RP-151695	R5s150810	approved	Addition of Rel-11 LTE-A SIMTC test case 9.2.3.1.8a	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2939	-	Rel-12	F	RP-151695	R5s150812	approved	Correction to GCF WI-087 EUTRA RRC Test case 8.4.3.3	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2940	-	Rel-12	F	RP-151695	R5s150815	approved	Correction to GCF WI-087 EUTRA Idle mode Testcases 6.2.3.28, 6.2.3.30	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2941	-	Rel-12	F	RP-151695	R5s150816	approved	Correction to GCF WI-179 LTE-NIMTC testcase 9.2.1.1.2a	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2942	-	Rel-12	F	RP-151695	R5s150819	approved	Correction to LTE-A MAC test case 7.1.3.11.x	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2943	-	Rel-12	F	RP-151695	R5s150820	approved	Correction to LTE-A RRC CA test cases 8.2.4.16.1,8.2.4.16.2 and 8.2.4.16.3	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2944	-	Rel-12	B	RP-151695	R5s150821	approved	Addition of Rel-11 LTE-A SIMTC test case 9.2.3.1.8b	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2945	-	Rel-12	F	RP-151695	R5s150824	approved	Correction to GCF WI-087 Multi-layer testcase 13.3.2.2	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2946	-	Rel-12	F	RP-151695	R5s150828	approved	Correction to GCF WI-162 CA IRAT test case 8.4.2.7.1, 8.4.2.7.2 and 8.4.2.7.3	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2947	-	Rel-12	B	RP-151695	R5s150833	approved	Addition of GCF WI-227 Inter-RAT eMDT test case 8.6.7.4	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2948	-	Rel-12	F	RP-151695	R5s150836	approved	Correction to TestCases 6.2.2.2, 6.2.3.1, 6.2.3.1a	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2949	-	Rel-12	F	RP-151695	R5s150837	approved	Correction to configuration of DRX	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2950	-	Rel-12	F	RP-151695	R5s150838	approved	Correction to UTRAN function f_UTRAN_GMM_ServReq	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2951	-	Rel-12	F	RP-151695	R5s150839	approved	Correction of GCF WI-081 Testcases 12.2.x and 12.3.x	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2952	-	Rel-12	F	RP-151695	R5s150840	approved	Correction of GCF WI-082 EPC test case 9.3.2.1	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2953	-	Rel-12	F	RP-151695	R5s150842	approved	Correction of GCF WI 82 EPC test case 9.1.2.3	12.3.0	12.4.0	R5	TEI8_Test

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36.523-3	2954	-	Rel-12	F	RP-151695	R5s150844	approved	Correction to Rel-9 eMBMS test case 17.2.4	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2955	-	Rel-12	F	RP-151695	R5s150845	approved	Correction to SS configuration for UTRAN	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2956	-	Rel-12	F	RP-151695	R5s150847	approved	Correction to GCF WI-162 CA testcases 8.4.2.7.x	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2957	-	Rel-12	F	RP-151695	R5s150848	approved	Correction to GCF WI-162 TestCase 7.1.3.11.2	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2958	-	Rel-12	F	RP-151695	R5s150849	approved	Correction to IMSs emergency call TestCases 11.2.1, 11.2.2 and 11.2.5	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2959	-	Rel-12	F	RP-151695	R5s150852	approved	Correction of GCF WI-162-Inter test cases 8.2.2.3.x	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2960	-	Rel-12	F	RP-151695	R5s150853	approved	Correction to GCF WI-086 SRVCC Testcases 13.4.3.x	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2961	-	Rel-12	F	RP-151695	R5s150855	approved	Correction to IMS emergency call TestCases 11.2.6	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2962	-	Rel-12	F	RP-151695	R5s150856	approved	Correction to Rel-11 rSRVCC test case 13.4.3.32	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2963	-	Rel-12	F	RP-151695	R5s150857	approved	Correction of function f_EUTRA_508Check_TrackingAreaUpdating_AfterHO_Steps7to8	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2964	-	Rel-12	F	RP-151695	R5s150858	approved	Correction to GCF WI-087 EUTRA EMM testcase 9.2.3.3.5	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2965	-	Rel-12	F	RP-151695	R5s150859	approved	Correction to GCF WI-081 testcase 7.2.3.5	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2966	-	Rel-12	F	RP-151695	R5s150860	approved	Correction to GCF WI-082 EUTRA EMM test case 9.2.1.1.22	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2967	-	Rel-12	F	RP-151695	R5s150861	approved	Correction to eMBMS-SC test cases 17.4.x	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2968	-	Rel-12	F	RP-151695	R5s150862	approved	Correction to Bandwidth in MIB in initialisation of CA Testcases	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2969	-	Rel-12	F	RP-151695	R5s150863	approved	Correction to EMM test case 9.2.2.1.3	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2970	-	Rel-12	F	RP-151695	R5s150867	approved	Correction to Rel-8 LTE<>GERAN test cases	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2971	-	Rel-12	F	RP-151695	R5s150869	approved	Correction to ESM test case 10.2.1	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2972	-	Rel-12	F	RP-151695	R5s150870	approved	Correction to Rel-10 MDT test case 8.6.4.4	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2973	-	Rel-12	B	RP-151695	R5s150871	approved	Addition of LTE-A Rel-11 test case 8.5.4.2	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2974	-	Rel-12	F	RP-151695	R5s150874	approved	Correction to Rel-11 SIMTC test case 10.5.1b	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2975	-	Rel-12	F	RP-151695	R5s150875	approved	Correction of GCF WI-227-Handover failure logging test case 8.6.6.6	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2976	-	Rel-12	F	RP-151695	R5s150876	approved	Correction of GCF WI-227 RLF logging test case 8.6.4.9	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2977	-	Rel-12	F	RP-151695	R5s150877	approved	Correction to EMM test case 9.2.1.1.30	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2978	-	Rel-12	B	RP-151695	R5s150882	approved	LTE_TDD: Addition of LTE-A Rel-11 test case 8.5.4.2	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2979	-	Rel-12	F	RP-151695	R5s150884	approved	Correction of Postamble procedure for LTE<>1xRTT Pre-registration TCs	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2980	-	Rel-12	F	RP-151695	R5s150887	approved	Correction to IMS Emergency Call test case 11.2.10	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2981	-	Rel-12	F	RP-151695	R5s150899	approved	Correction to UTRAN postamble function for IMS emergency call test cases	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2982	-	Rel-12	F	RP-151695	R5s150901	approved	Correction to GCF WI-172 EUTRA<>GERAN aSRVCC testcases 13.4.3.26 and 13.4.3.28	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2983	-	Rel-12	F	RP-151695	R5s150902	approved	Correction to test case 9.2.3.2.12 with IMS enabled	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2984	-	Rel-12	F	RP-151695	R5s150903	approved	Correction to GCF WI-179 NiMTC test case 6.1.1.7	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2985	-	Rel-12	F	RP-151695	R5s150904	approved	Correction to MAC layer CA test cases 7.1.4.19.x	12.3.0	12.4.0	R5	TEI11_Test

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36.523-3	2986	-	Rel-12	F	RP-151695	R5s150905	approved	Correction to LTE<>GERAN test cases 6.2.3.23, 6.2.3.24, 6.2.3.29	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2987	-	Rel-12	B	RP-151695	R5s150906	approved	LTE_TDD: Addition of Rel-10 LTE-A NIMTC test case 6.1.1.7	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2988	-	Rel-12	F	RP-151695	R5s150912	approved	Correction to EUTRA eMDT test case 8.6.11.1	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2989	-	Rel-12	F	RP-151695	R5s150913	approved	Correction to TestCases 6.2.2.2, 6.2.3.1, 6.2.3.1a with IMS enabled	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2990	-	Rel-12	F	RP-151695	R5s150914	approved	Correction to UL EARFCN for CA_4A-30A	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2991	-	Rel-12	F	RP-151695	R5s150917	approved	Correction to SS configuration for UTRAN	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2992	-	Rel-12	B	RP-151695	R5s150920	approved	LTE_TDD: Addition of Rel-10 LTE-A NIMTC test case 6.1.1.7a	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2993	-	Rel-12	F	RP-151695	R5s150922	approved	Correction to LTE MAC test cases ((IMS enabled UE / Multi-PDN)	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	2994	-	Rel-12	F	RP-151695	R5s150923	approved	Correction to MDT test cases 8.6.6.1,8.6.6.2 and 8.6.6.4	12.3.0	12.4.0	R5	TEI10_Test
36.523-3	2995	-	Rel-12	B	RP-151695	R5s150924	approved	Addition of EUTRA eMDT test case 8.6.8.4	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2996	-	Rel-12	B	RP-151695	R5s150926	approved	LTE-TDD : Addition of EUTRA eMDT test case 8.6.8.4	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	2997	-	Rel-12	B	RP-151695	R5s150928	approved	Addition of SSAC test case 13.5.1	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2998	-	Rel-12	B	RP-151695	R5s150930	approved	Addition of SSAC test case 13.5.2	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	2999	-	Rel-12	B	RP-151695	R5s150932	approved	Addition of SSAC test case 13.5.3	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	3000	-	Rel-12	B	RP-151695	R5s150935	approved	LTE_TDD : Addition of SSAC test case 13.5.1	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	3001	-	Rel-12	B	RP-151695	R5s150937	approved	LTE_TDD : Addition of SSAC test case 13.5.2	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	3002	-	Rel-12	B	RP-151695	R5s150939	approved	LTE_TDD : Addition of SSAC test case 13.5.3	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	3003	-	Rel-12	B	RP-151695	R5s150941	approved	Addition of 6.2.3.27 - InterRAT GCF WI-87 EUTRA<>GERAN Test case	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3004	-	Rel-12	F	RP-151695	R5s150943	approved	Correction to LTE-IRAT CSG and Home eNB testcases with UTRAN Bands 4,9 and 10	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	3005	-	Rel-12	F	RP-151695	R5s150944	approved	Correction to test case 9.2.3.2.2 with IMS enabled	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3006	-	Rel-12	F	RP-151695	R5s150947	approved	Correction for LTE test cases requiring IMS registration	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3007	-	Rel-12	F	RP-151695	R5s150948	approved	Correction to eMBMS_SC_CA test cases 17.4.11.1 and 17.4.11.2	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	3008	-	Rel-12	B	RP-151695	R5s150954	approved	Addition of EUTRA Rel-11 eDDA test case 8.2.2.6.1	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	3009	-	Rel-12	B	RP-151695	R5s150957	approved	LTE-TDD : Addition of EUTRA Rel-11 eDDA test case 8.2.2.6.1	12.3.0	12.4.0	R5	TEI11_Test
36.523-3	3010	-	Rel-12	F	RP-151695	R5s150960	approved	Correction to EUTRA RRC test case 8.2.4.1 ((IMS enabled UE / Multi-PDN)	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3011	-	Rel-12	F	RP-151695	R5s150961	approved	Correction to EMM test case 9.2.2.2.1 ((IMS enabled UE / Multi-PDN)	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3012	-	Rel-12	F	RP-151695	R5s150963	approved	Correction to EMM test cases for IMS-enabled UEs	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3013	-	Rel-12	F	RP-151695	R5s150964	approved	Correction of f_EUTRA_508_IMSEmergencyCallLimitedService_Steps5a1_15	12.3.0	12.4.0	R5	TEI9_Test
36.523-3	3014	-	Rel-12	F	RP-151695	R5s150966	approved	Correction to function f_TC_8_4_2_7_Common_UTRAN	12.3.0	12.4.0	R5	TEI10_Test

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.523-3	3015	-	Rel-12	F	RP-151695	R5s150969	approved	Correction to GCF WI-082 EMM test case 9.3.1.18	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3016	-	Rel-12	F	RP-151695	R5s150971	approved	Correction to function f_IMS_InviteRequest_MessageHeaderRX() for SRVCC test cases	12.3.0	12.4.0	R5	TEI8_Test
36.523-3	3017	-	Rel-12	F	RP-151694	-	approved	CR to 36.523-3: Add new verified and e-mail agreed TTCN test cases in the TC lists in 36.523-3 (prose), Annex A	12.3.0	12.4.0	R5	TEI8_Test
36.833-2-07	0003	-	Rel-12	B	RP-152170	R4-157431	approved	CR for TR 36.833-2-07 on CA_7A-7A BCS1	12.1.0	12.2.0	R4	LTE_CA_NC_B7_BWset-Core
36.856	0001	1	Rel-13	B	RP-152098	R3-152373	approved	Description of soltions for RRC rejections during Overload Start	12.0.0	13.0.0	R3	RSE-RAN_LTE-Core
36.903	0213	-	Rel-12	F	RP-151713	R5-155017	approved	Add Test Tolerance Analyses for TS 37.571-1 Test Cases 10.3A_1 and 10.4A_1	12.7.0	12.8.0	R5	TEI12_Test
36.903	0214	-	Rel-12	F	RP-151707	R5-155095	approved	Add Test Tolerance analysis for 7.1.4A	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.903	0215	-	Rel-12	F	RP-151687	R5-155140	approved	Update Test Tolerance analysis for TS 36.521-3 Test cases 4.3.2 and 4.3.4.2	12.7.0	12.8.0	R5	TEI9_Test
36.903	0216	-	Rel-12	F	RP-151685	R5-155142	approved	Update Test Tolerance analysis for TS 36.521-3 Test cases 4.4.1 and 4.4.2	12.7.0	12.8.0	R5	TEI8_Test
36.903	0217	1	Rel-12	F	RP-151685	R5-155886	approved	Update Test Tolerance analysis for TS 36.521-3 Test cases 4.5.1.1 and 4.5.2.1	12.7.0	12.8.0	R5	TEI8_Test
36.903	0218	1	Rel-12	F	RP-151688	R5-155887	approved	Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.2A	12.7.0	12.8.0	R5	TEI10_Test
36.903	0219	-	Rel-12	F	RP-151688	R5-155148	approved	Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.4A	12.7.0	12.8.0	R5	TEI10_Test
36.903	0220	-	Rel-12	F	RP-151688	R5-155150	approved	Add Test Tolerance analysis for TS 36.521-3 Test case 8.20.4B	12.7.0	12.8.0	R5	TEI10_Test
36.903	0221	-	Rel-12	F	RP-151688	R5-155195	approved	Update Test Tolerance analyses for serving cell Intra Frequency Absolute RSRQ Accuracy Test cases	12.7.0	12.8.0	R5	TEI10_Test
36.903	0222	-	Rel-12	F	RP-151688	R5-155198	approved	Add Test Tolerance analysis for 2DL CA activation and deactivation of known SCell in non-DRX Test cases	12.7.0	12.8.0	R5	TEI10_Test
36.903	0223	1	Rel-12	F	RP-151707	R5-155882	approved	Add Test Tolerance analysis for E-UTRAN TDD – UE Timing Advanced Adjustment Accuracy Test for SCell in sTAG	12.7.0	12.8.0	R5	LTE_CA_Rel12_2UL-UEConTest
36.903	0224	-	Rel-12	F	RP-151700	R5-155202	approved	Add Test Tolerance analysis for 3DL CA Event Triggered Reporting under Deactivated SCells in Non-DRX Test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.903	0225	-	Rel-12	F	RP-151700	R5-155206	approved	Add Test Tolerance analysis for 3DL E-UTRA for Carrier Aggregation RSRP Accuracy Test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.903	0226	-	Rel-12	F	RP-151700	R5-155208	approved	Add Test Tolerance analysis for 3DL E-UTRA for Carrier Aggregation RSRQ Accuracy Test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.903	0227	-	Rel-12	F	RP-151700	R5-155418	approved	Addition of Test Tolerance analysis for 3DL E-UTRA for Carrier Aggregation RSRP Accuracy Test cases	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.903	0228	-	Rel-12	F	RP-151700	R5-155588	approved	Add Test Tolerance analysis for TCs 8.16.31+8.16.32+8.16.33+8.16.34 36.903 CR	12.7.0	12.8.0	R5	LTE_CA_Rel12_3DL-UEConTest
36.904	0020	1	Rel-12	F	RP-151708	R5-155883	approved	Add Test Tolerance analysis for FDD multi-cell SU-MIMO test case (8.2.1.3.1C)	11.3.0	12.0.0	R5	LTE_SUMIMO_RX-UEConTest

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
36.904	0021	1	Rel-12	F	RP-151708	R5-155884	approved	Add Test Tolerance analysis for TDD multi-cell SU-MIMO test case (8.2.2.3.1C)	11.3.0	12.0.0	R5	LTE_SUMIMO_RX-UEConTest
36.904	0022	1	Rel-12	F	RP-151708	R5-155885	approved	Addition of LTE Type C group into 36.904	11.3.0	12.0.0	R5	LTE_SUMIMO_RX-UEConTest
37.104	0265	-	Rel-13	B	RP-152171	R4-156493	approved	Introduction of Band 66	12.8.0	13.0.0	R4	LTE_1980_2170_REG1-Core
37.104	0268	1	Rel-11	F	RP-152132	R4-156730	approved	Tx IM requirement correction	11.12.0	11.13.0	R4	TEI11
37.104	0269	-	Rel-12	A	RP-152132	R4-156545	approved	Tx IM requirement correction	12.8.0	12.9.0	R4	TEI11
37.104	0270	1	Rel-13	B	RP-152157	R4-156891	approved	Introduction of Band 67 to 37.104	12.8.0	13.0.0	R4	LTE_CA_700EU_B20-Core
37.104	0271	-	Rel-13	B	RP-152172	R4-157183	approved	Introduction of Band 66	12.8.0	13.0.0	R4	LTE_AWS_EXT-Core
37.104	0272	-	Rel-13	B	RP-152173	R4-157595	approved	Introduction of 1447-1467MHz Band into 37.104	12.8.0	13.0.0	R4	LTE_TDD_1447MHz_China-Core
37.104	0273	1	Rel-11	F	RP-152132	R4-158349	approved	BS Spec improvements: TS 37.104 Corrections	11.12.0	11.13.0	R4	TEI11
37.104	0274	-	Rel-12	A	RP-152132	R4-157753	approved	BS Spec improvements: TS 37.104 Corrections	12.8.0	12.9.0	R4	TEI11
37.104	0275	-	Rel-11	F	RP-152132	R4-157851	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	11.12.0	11.13.0	R4	LTE_CA_enh-Core
37.104	0276	-	Rel-12	A	RP-152132	R4-157852	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	12.8.0	12.9.0	R4	LTE_CA_enh-Core
37.104	0279	1	Rel-11	F	RP-152132	R4-158232	approved	Correction of Unwanted Emission Mask (UEM) for MSR BS capable of multiband operation	11.12.0	11.13.0	R4	MB_MSR_RF-Core
37.104	0280	-	Rel-12	A	RP-152132	R4-158012	approved	Correction of Unwanted Emission Mask (UEM) for MSR BS capable of multiband operation	12.8.0	12.9.0	R4	MB_MSR_RF-Core
37.113	0039	-	Rel-13	B	RP-152171	R4-156090	approved	Introduction of Band 65	12.3.0	13.0.0	R4	LTE_1980_2170_REG1-Core
37.113	0040	-	Rel-13	B	RP-152172	R4-156098	approved	Introduction of Band 66	12.3.0	13.0.0	R4	LTE_AWS_EXT-Core
37.113	0041	-	Rel-13	B	RP-152157	R4-156102	approved	Introduction of Band 67	12.3.0	13.0.0	R4	LTE_CA_700EU_B20-Core
37.113	0042	-	Rel-13	B	RP-152173	R4-157596	approved	Introduction of 1447-1467MHz Band into 37.113	12.3.0	13.0.0	R4	LTE_TDD_1447MHz_China-Core
37.141	0422	1	Rel-13	B	RP-152157	R4-156893	approved	Introduction of Band 67 to 37.141	13.0.0	13.1.0	R4	LTE_CA_700EU_B20-Perf
37.141	0427	-	Rel-13	B	RP-152172	R4-157185	approved	Introduction of Band 66	13.0.0	13.1.0	R4	LTE_AWS_EXT-Perf
37.141	0428	-	Rel-13	B	RP-152171	R4-157189	approved	Introduction of Band 65	13.0.0	13.1.0	R4	LTE_1980_2170_REG1-Perf
37.141	0429	-	Rel-13	B	RP-152173	R4-157608	approved	Introduction of 1447-1467MHz Band into 37.141	13.0.0	13.1.0	R4	LTE_TDD_1447MHz_China-Core
37.141	0430	1	Rel-11	F	RP-152132	R4-158350	approved	BS Spec improvements: TS 37.141 Corrections	11.12.0	11.13.0	R4	TEI11
37.141	0431	-	Rel-12	A	RP-152132	R4-157755	approved	BS Spec improvements: TS 37.141 Corrections	12.8.0	12.9.0	R4	TEI11
37.141	0432	-	Rel-13	A	RP-152132	R4-157756	approved	BS Spec improvements: TS 37.141 Corrections	13.0.0	13.1.0	R4	TEI11
37.141	0433	1	Rel-11	F	RP-152132	R4-158231	approved	Multi-band test configuration clarification	11.12.0	11.13.0	R4	MB_MSR_RF-Perf
37.141	0434	-	Rel-12	A	RP-152132	R4-157762	approved	Multi-band test configuration clarification	12.8.0	12.9.0	R4	MB_MSR_RF-Perf
37.141	0435	-	Rel-13	A	RP-152132	R4-157763	approved	Multi-band test configuration clarification	13.0.0	13.1.0	R4	MB_MSR_RF-Perf
37.141	0436	-	Rel-11	F	RP-152132	R4-157853	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	11.12.0	11.13.0	R4	LTE_CA_Enh-Perf

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
37.141	0437	-	Rel-12	A	RP-152132	R4-157854	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	12.8.0	12.9.0	R4	LTE_CA_Enh-Perf
37.141	0438	-	Rel-13	A	RP-152132	R4-157855	approved	Corrections on definition of f_offsetmax for BS operating in multiple bands or non-contiguous spectrum	13.0.0	13.1.0	R4	LTE_CA_Enh-Perf
37.141	0442	1	Rel-11	F	RP-152132	R4-158286	approved	Clarification on the transmitter intermodulation requirement in TS37.141	11.12.0	11.13.0	R4	TEI11
37.141	0443	-	Rel-12	A	RP-152132	R4-157982	approved	Clarification on the transmitter intermodulation requirement in TS37.141	12.8.0	12.9.0	R4	TEI11
37.141	0444	-	Rel-13	A	RP-152132	R4-157983	approved	Clarification on the transmitter intermodulation requirement in TS37.141	13.0.0	13.1.0	R4	TEI11
37.141	0445	1	Rel-11	F	RP-152132	R4-158367	approved	Correction of Unwanted Emission Mask (UEM) for MSR BS capable of multiband operation	11.12.0	11.13.0	R4	MB_MSR_RF-Perf
37.141	0446	-	Rel-12	A	RP-152132	R4-158014	approved	Correction of Unwanted Emission Mask (UEM) for MSR BS capable of multiband operation	12.8.0	12.9.0	R4	MB_MSR_RF-Perf
37.141	0447	-	Rel-13	A	RP-152132	R4-158015	approved	Correction of Unwanted Emission Mask (UEM) for MSR BS capable of multiband operation	13.0.0	13.1.0	R4	MB_MSR_RF-Perf
37.320	0067	1	Rel-13	B	RP-152082	R2-156954	approved	Further Enhancements of MDT for E-UTRA	12.2.0	13.0.0	R2	LTE_eMDT2-Core
37.571-1	0145	-	Rel-12	F	RP-151713	R5-155018	approved	Uncertainties and Test Tolerances for RSTD Test Cases 10.3A_1 and 10.4A_1	12.4.0	12.5.0	R5	TEI12_Test
37.571-1	0146	-	Rel-12	F	RP-151713	R5-155035	approved	Incorrect Table Note referenced in LPP Request Table	12.4.0	12.5.0	R5	TEI12_Test
37.571-1	0147	-	Rel-10	F	RP-151688	R5-155041	approved	Removal of technical content in 37.571-1 v10.7.0 and substitution with pointer to the next Release	10.7.0	10.8.0	R5	TEI10_Test
37.571-1	0148	-	Rel-11	F	RP-151696	R5-155042	approved	Removal of technical content in 37.571-1 v11.2.0 and substitution with pointer to the next Release	11.2.0	11.3.0	R5	TEI11_Test
37.571-1	0149	-	Rel-12	F	RP-151713	R5-155063	approved	Incorrect references in TDD test cases	12.4.0	12.5.0	R5	TEI12_Test
37.571-1	0150	-	Rel-12	F	RP-151713	R5-155064	approved	Reference [2] has no explanation	12.4.0	12.5.0	R5	TEI12_Test
37.571-1	0151	-	Rel-12	F	RP-151713	R5-155065	approved	Remove square brackets from RSTD tests	12.4.0	12.5.0	R5	TEI12_Test
37.571-1	0152	-	Rel-12	F	RP-151713	R5-155066	approved	Incorrect Section number referenced	12.4.0	12.5.0	R5	TEI12_Test
37.571-1	0153	-	Rel-12	F	RP-151713	R5-155081	approved	Editorial changes to correct Section and Table references	12.4.0	12.5.0	R5	TEI12_Test
37.571-1	0154	1	Rel-12	F	RP-151700	R5-155875	approved	Two new 3 DL CA RSTD Measurement Reporting Delay test cases	12.4.0	12.5.0	R5	LTE_CA_Rel12_3DL-UEConTest
37.571-1	0155	1	Rel-12	F	RP-151700	R5-156111	approved	Two new 3 DL CA RSTD Measurement Accuracy test cases	12.4.0	12.5.0	R5	LTE_CA_Rel12_3DL-UEConTest
37.571-2	0062	-	Rel-10	F	RP-151688	R5-155043	approved	Removal of technical content in 37.571-2 v10.9.0 and substitution with pointer to the next Release	10.9.0	10.10.0	R5	TEI10_Test
37.571-2	0063	-	Rel-11	F	RP-151696	R5-155044	approved	Removal of technical content in 37.571-2 v11.0.0 and substitution with pointer to the next Release	11.0.0	11.1.0	R5	TEI11_Test
37.571-2	0064	-	Rel-12	F	RP-151713	R5-155101	approved	Correction to use of Modernized GPS with BDS	12.3.0	12.4.0	R5	TEI12_Test
37.571-3	0040	-	Rel-10	F	RP-151688	R5-155045	approved	Removal of technical content in 37.571-3 v10.7.0 and substitution with pointer to the next Release	10.7.0	10.8.0	R5	TEI10_Test
37.571-3	0041	-	Rel-11	F	RP-151696	R5-155046	approved	Removal of technical content in 37.571-3 v11.0.0 and substitution with pointer to the next Release	11.0.0	11.1.0	R5	TEI11_Test

Spec	CR	Rev	Phase	Cat	Plenary doc	WG doc	TSG status	Subject	CR written to	Resulting vers	WG	Workitem
37.571-3	0042	1	Rel-12	F	RP-151700	R5-155876	approved	Applicabilities for two new 3 DL CA RSTD Measurement Reporting Delay test cases	12.4.0	12.5.0	R5	LTE_CA_Rel12_3DL-UEConTest
37.571-3	0043	1	Rel-12	F	RP-151700	R5-156112	approved	Applicabilities for two new 3 DL CA RSTD Measurement Accuracy test cases	12.4.0	12.5.0	R5	LTE_CA_Rel12_3DL-UEConTest
37.571-3	0044	-	Rel-12	F	RP-151696	R5-155137	approved	Updating applicability statements for ECID feICIC test cases 8.1.5 and 8.1.6	12.4.0	12.5.0	R5	TEI11_Test
37.571-3	0045	1	Rel-12	F	RP-151685	R5-156010	approved	Addition of release RAT column to applicability table 4-3	12.4.0	12.5.0	R5	TEI8_Test
37.571-3	0047	1	Rel-12	F	RP-151685	R5-155945	approved	Addition of release RAT column to applicability tables 4-7	12.4.0	12.5.0	R5	TEI8_Test
37.571-4	0066	-	Rel-10	F	RP-151688	R5-155047	approved	Removal of technical content in 37.571-4 v10.9.0 and substitution with pointer to the next Release	10.9.0	10.10.0	R5	TEI10_Test
37.571-4	0067	-	Rel-11	F	RP-151696	R5-155048	approved	Removal of technical content in 37.571-4 v11.0.0 and substitution with pointer to the next Release	11.0.0	11.1.0	R5	TEI11_Test
37.571-4	0068	-	Rel-12	B	RP-151698	R5s150710	approved	Addition of GCF WI-166 EUTRA UE Positioning test case 7.3.4.2.7s	12.2.0	12.3.0	R5	TEI9_Test
37.571-4	0069	-	Rel-12	B	RP-151698	R5s150712	approved	Addition of GCF WI-166 EUTRA UE Positioning test case 7.3.4.4.7s	12.2.0	12.3.0	R5	TEI9_Test
37.571-4	0070	-	Rel-12	F	RP-151698	R5s150805	approved	Correction to POS capability check procedure	12.2.0	12.3.0	R5	TEI9_Test
37.571-4	0071	-	Rel-12	F	RP-151698	R5s150911	approved	Code improvements in Positioning test cases	12.2.0	12.3.0	R5	TEI8_Test
37.571-4	0072	-	Rel-12	F	RP-151697	-	approved	CR to 37.571-4: Add new verified and e-mail agreed TTCN test cases in the TC lists in 37.571-4 (prose), Annex A	12.2.0	12.3.0	R5	TEI9_Test
37.571-5	0128	-	Rel-10	F	RP-151688	R5-155049	approved	Removal of technical content in 37.571-5 v10.10.0 and substitution with pointer to the next Release	10.10.0	10.11.0	R5	TEI10_Test
37.571-5	0129	-	Rel-11	F	RP-151696	R5-155050	approved	Removal of technical content in 37.571-5 v11.0.0 and substitution with pointer to the next Release	11.0.0	11.1.0	R5	TEI11_Test
37.571-5	0130	1	Rel-12	F	RP-151700	R5-155877	approved	Values for two new 3 DL CA RSTD Measurement Reporting Delay test cases	12.3.0	12.4.0	R5	LTE_CA_Rel12_3DL-UEConTest
37.571-5	0131	-	Rel-12	F	RP-151700	R5-155185	approved	Values for two new 3 DL CA RSTD Measurement Accuracy test cases	12.3.0	12.4.0	R5	LTE_CA_Rel12_3DL-UEConTest
37.571-5	0132	2	Rel-12	F	RP-151713	R5-156187	approved	LBS-Perf: Corrections to A-BDS navigation files	12.3.0	12.4.0	R5	TEI12_Test
37.571-5	0133	2	Rel-12	F	RP-151713	R5-156186	approved	LBS-Sig: Corrections to A-BDS navigation files	12.3.0	12.4.0	R5	TEI12_Test
37.857	0001	1	Rel-13	F	RP-152028	R1-156113	approved	Clarification on Baseline performance of existing positioning techniques	13.0.0	13.1.0	R1	FS_UTRA_LTE_iPos_enh
37.977	0023	1	Rel-13	F	RP-152145	R4-158318	approved	CR to 37.977 on harmonization test campaign	13.1.0	13.2.0	R4	UTRA_LTE_MIMO_OTA-Core
37.977	0025	-	Rel-13	F	RP-152145	R4-157285	approved	CR to 37.977 to clarify BS antenna assumptions for channel model validation	13.1.0	13.2.0	R4	UTRA_LTE_MIMO_OTA-Core
37.977	0026	2	Rel-13	F	RP-152145	R4-158370	approved	CR to TR37.977: Measurement uncertainty budget for AC and RC Methodologies	13.1.0	13.2.0	R4	UTRA_LTE_MIMO_OTA-Core

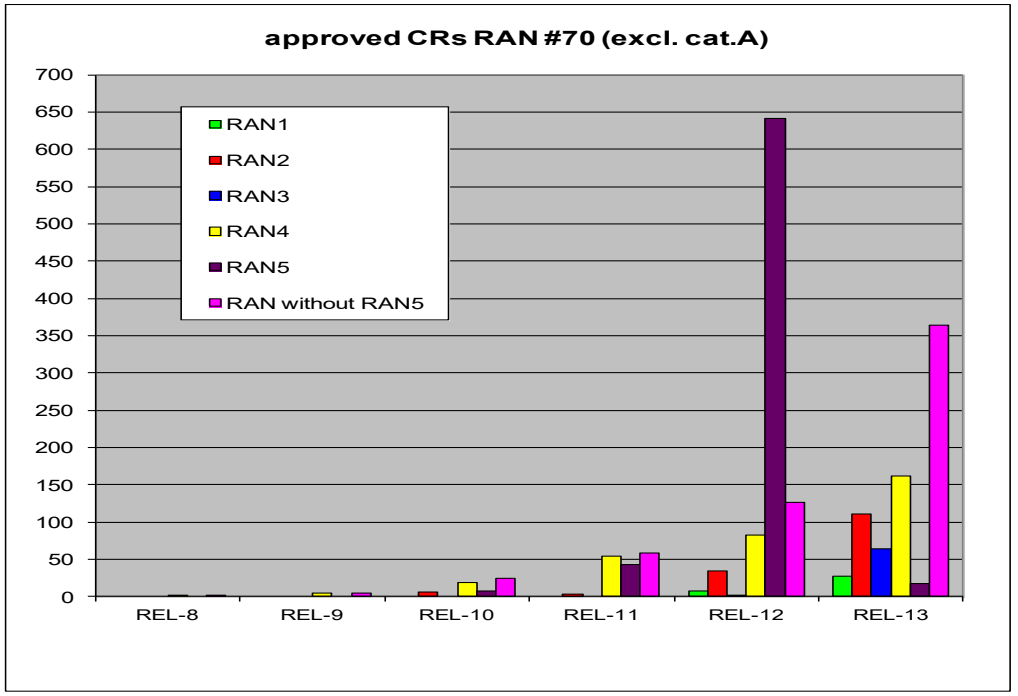


Fig. E-1: Approved CRs (excluding category A CRs) of RAN #70 per WG and release

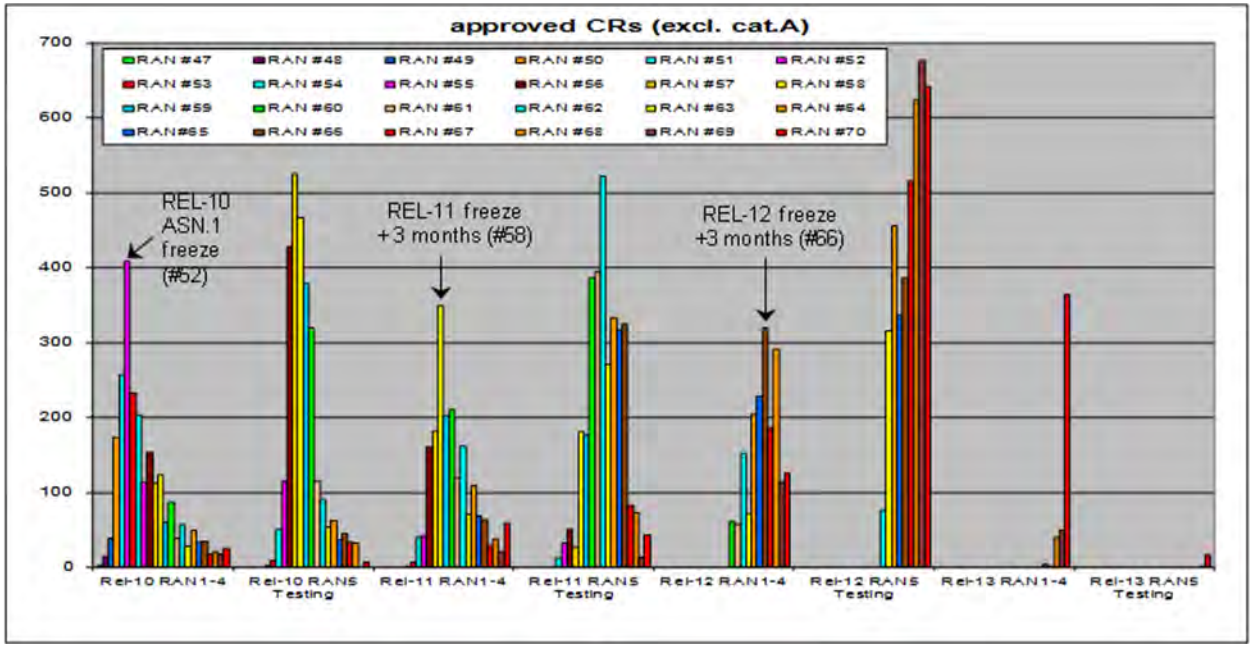


Fig. E-2: Approved CRs (<u>excluding</u> category A CRs) of previous RAN meetings per release
<u>REL freeze</u>: REL-8: RAN #42, REL-9: RAN #46, REL-10: RAN #51, REL-11: RAN #57, REL-12: RAN #65, REL-13: RAN #70
<u>ASN.1 freeze</u>: REL-8: RAN #43 (713 CRs), REL-9: RAN #47 (355 CRs), REL-10: RAN #52 (apart from Un), REL-11: RAN #59, REL-12: RAN #67, REL-13: RAN #71*
***: planned**

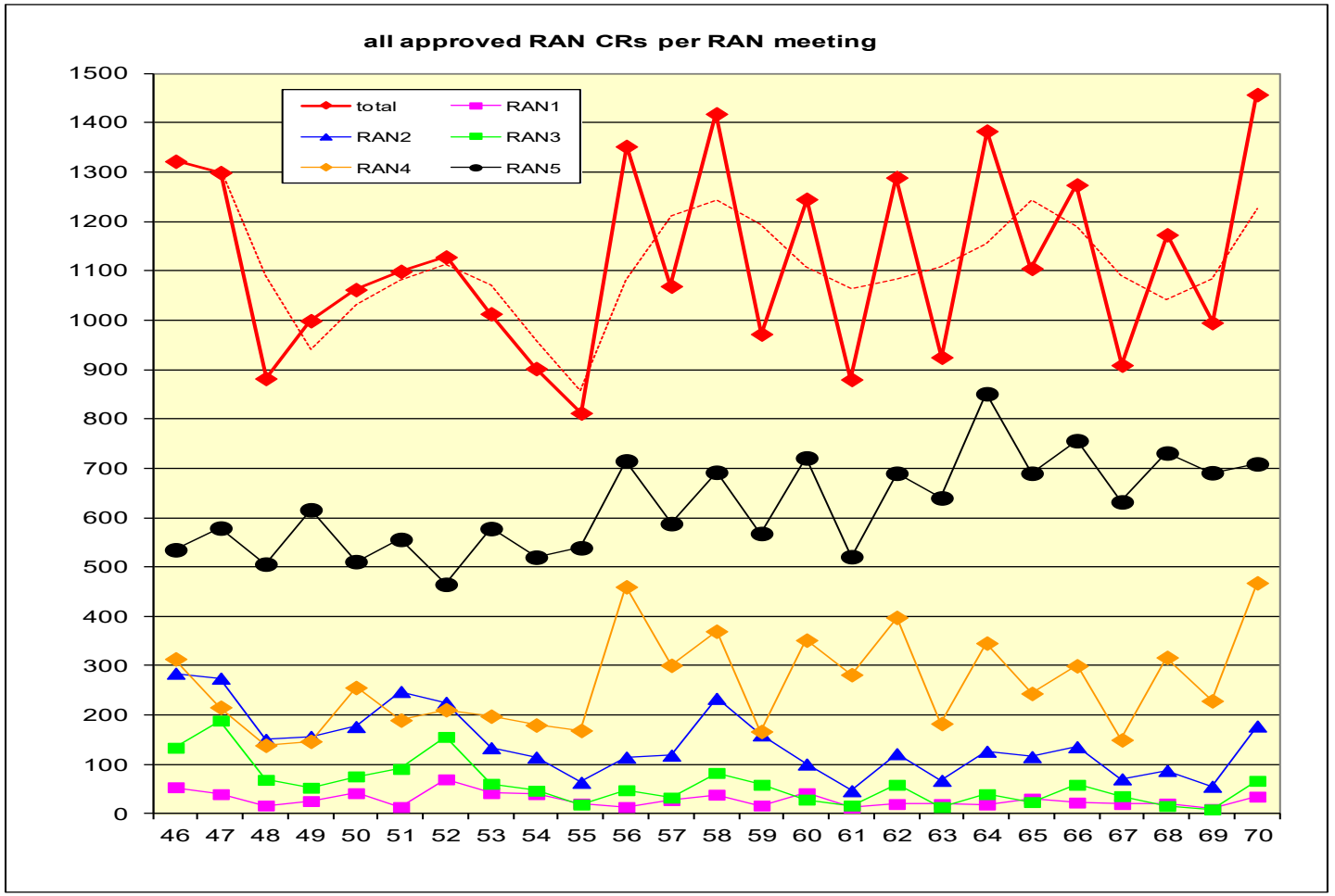


Fig. E-3: Approved CRs (all releases <u>including</u> category A CRs) per RAN WG and per RAN meeting
REL freeze: REL-8: RAN #42, REL-9: RAN #46, REL-10: RAN #51, REL-11: RAN #57, REL-12: RAN #65, REL-13: RAN #70
ASN.1 freeze: REL-8: RAN #43, REL-9: RAN #47, REL-10: RAN #52 (apart from Un), REL-11: RAN #59, REL-12: RAN #67, REL-13: RAN #71*
***: planned**

Annex F:
Summary of RAN work items (WI) and study items (SI)

An overview of recent RAN work items and study items (starting from REL-9 and including the new WIs & SIs approved at this meeting) is attached to this report.

This overview is used as input for the 3GPP workplan which lists all 3GPP work and study items.

NOTE: REL-4, REL-5, REL-6 and REL-7 were closed after RAN #65, i.e. no CRs to specifications of these releases will be considered anymore.

status after RAN #69:

REL-7:		
REL-7 stage 1 freeze:	Sep.05	TSG #29
REL-7 stage 2 freeze:	Sep. 06	TSG #33
REL-7 freeze:	March 07	TSG #35
REL-7 ASN.1 freeze:	March 08	TSG #39
REL-8:	7 quarters	
REL-8 stage 1 freeze:	Dec.07	TSG #38
REL-8 stage 2 freeze:	June 08	TSG #40
REL-8 freeze:	Dec.08	TSG #42
REL-8 ASN.1 freeze:	March 09	TSG #43
REL-9:	4 quarters	
REL-9 stage 1 freeze:	Dec.08	TSG #42
REL-9 stage 2 freeze:	June 09	TSG #44
REL-9 freeze:	Dec.09	TSG #46
REL-9 ASN.1 freeze:	March 10	TSG #47
REL-10:	5 quarters	
REL-10 stage 1 freeze:	March 10	TSG #47
REL-10 stage 2 freeze:	Sep.10	TSG #49
REL-10 freeze:	March 11	TSG #51
REL-10 ASN.1 freeze:	June 11	TSG #52 (apart from Un for Relays: frozen in Sep.11 at TSG #53)
REL-11:	6 quarters	
REL-11 stage 1 freeze:	Sep.11	TSG #53
REL-11 stage 2 freeze:	March 12	TSG #55
REL-11 freeze:	Sep.12	TSG #57
REL-11 ASN.1 freeze:	March 13	TSG #59

REL-12:	8 quarters	
REL-12 stage 1 freeze:	March 13	TSG #59
REL-12 stage 2 freeze:	Dec.13	TSG #62
REL-12 freeze:	Sep.14	TSG #65
REL-12 ASN.1 freeze:	March 15	TSG #67

REL-13:	5 quarters	
REL-13 stage 1 freeze:	Sep.14	TSG #65
REL-13 stage 2 freeze:	June 15	TSG #68
REL-13 freeze:	Dec.15	TSG #70
REL-13 ASN.1 freeze:	March 16	TSG #71 (planned)

REL-14:	5 quarters	
REL-14 stage 1 freeze:	March 16	TSG #71 (tentative)**
REL-14 stage 2 freeze:	Sep.16	TSG #73 (tentative)**
REL-14 freeze:	March 17	TSG #75 (planned)**
REL-14 ASN.1 freeze:	June 17	TSG #76 (planned)**

**: These target dates were endorsed by SA #69 (in connection with proposal SP-150564), and with RP-152228 the REL-14 freeze date was confirmed.

REL-15:	5 quarters	
REL-15 stage 1 freeze:	tbd	
REL-15 stage 2 freeze:	tbd	
REL-15 freeze:	June 18	TSG #80 (planned), see RP-152228
REL-15 ASN.1 freeze:	Sep.18	TSG #81 (planned)

REL-16:	6 quarters	
REL-16 stage 1 freeze:	tbd	
REL-16 stage 2 freeze:	tbd	
REL-16 freeze:	Dec.19	TSG #86 (planned), see RP-152228
REL-16 ASN.1 freeze:	March 20	TSG #87 (planned)

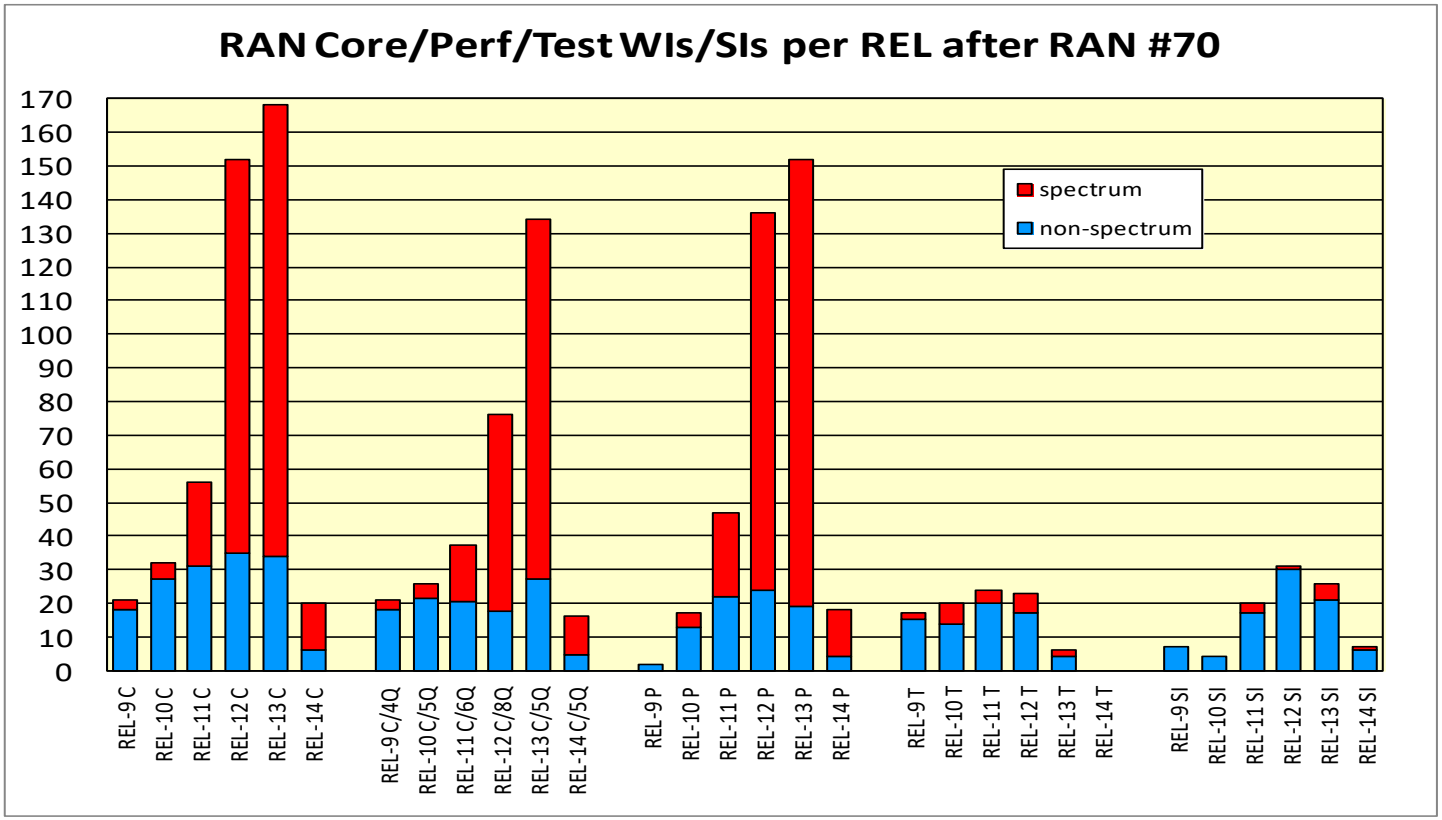


Fig. F-1: Statistics of all approved RAN WIs/SIs of REL-9/10//11/12/13/14 (status: after RAN #70) split into spectrum and non-spectrum related topics (including already completed WIs/SIs)
Note: For REL-14 the planned freeze in March 17 was used in this figure.

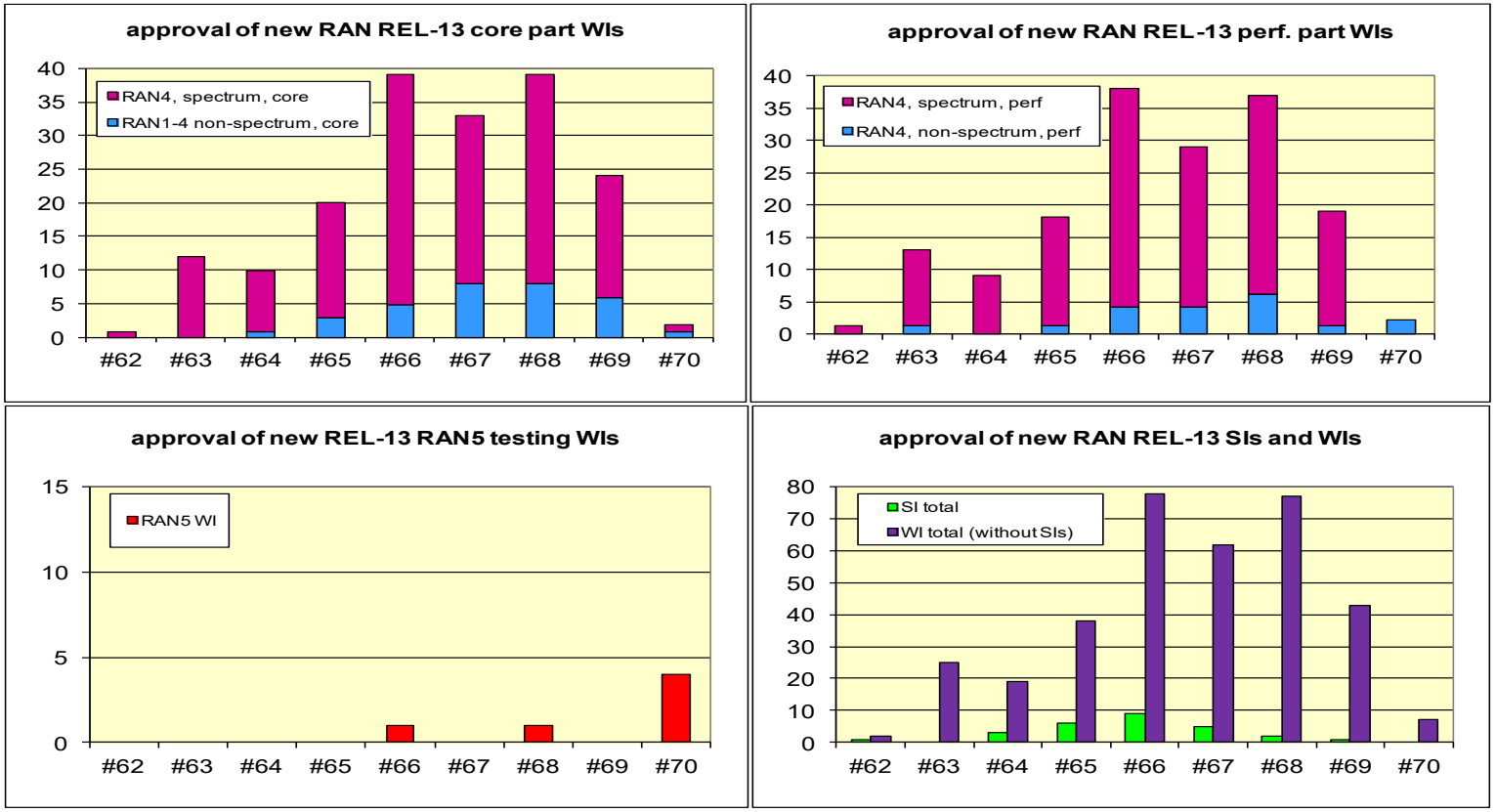


Fig. F-2: Overview of <u>new</u> REL-13 WIs and SIs per RAN meeting
(REL-12 freeze: RAN #65 (Sep.14), ASN.1 freeze: RAN #67;
REL-13 freeze: RAN #70 (Dec.15), ASN.1 freeze: planned for RAN #71)
(including WIs shifted from REL-12 to REL-13)

Annex G:
RAN email discussions between RAN #70 and RAN #71:

Announced by the RAN chairman on 11.12./14.12.2015 via the RAN reflector:

[Post-RAN#70-01] Scenarios and Requirements for Next Generation Access Technologies, see approved SI RP-152257
rapporteur: CMCC
- First goal of the discussion is to have a stable version of the TR; then we can start to populate it with initial agreeable scenarios and requirements
- Output of the discussion should be inputs (hopefully having broad support) to next RAN AH*: TR skeleton and possibly initial TR text proposals.
  *: 28/29.01.2016
  => conclusion: Email discussion summary RPa160012 and TR 38.913 v0.0.2 RPa160013 were submitted to the RAN ad hoc in Jan. 28-29, 2016 in Barcelona.

[Post-RAN#70-02] Downlink Multiuser Superposition Transmission for LTE
rapporteur: Mediatek
- Goal is to discuss exact scope and objectives of the proposed work in this area (RP-152289). It is also important that the discussion clearly highlights the different components of the new proposal and their expected benefits.
- Output of the discussion should be a proposal for RAN#71
  => conclusion: RP-160261 (new WID), RP-160262 (motivation) and RP-160263 (workplan) were submitted to RAN #71 as output of this email discussion.

[Post-RAN#70-03] FD-MIMO enhancements
rapporteur: Samsung
- Goal is to discuss exact scope and objectives of the proposed work in this area (RP-152287). It is also important that the discussion clearly highlights the different components of the new proposal and their expected benefits.
- Output of the discussion should be a proposal for RAN#71
  => conclusion: RP-160212 (new WID) was provided to RAN #71 as output of this email discussion.

[Post-RAN#70-04] eMBMS enhancements for LTE
rapporteur: Ericsson
- Goal is to discuss exact scope and objectives of the proposed work in this area (RP-152273). It is also important that the discussion clearly highlights the different components of the new proposal and their expected benefits.
- Output of the discussion should be a proposal for RAN#71
  => conclusion: RP-160273 (new WID) was provided to RAN #71 as output of this email discussion.

[Post-RAN#70-05] Support of 256QAM for UE categories 6/7/9/10
rapporteur: Intel
- Goal is to discuss the issue raised in RP-152243 and possible ways to address it.
- Output of the discussion should be a proposal for RAN#71
  => conclusion: Email discussion summary is provided to RAN #71 in RP-160423.

[Post-RAN#70-06] ToRs update for moving GERAN into RAN, see RP-151781, RP-151783, RP-151784 (AI 19)
rapporteur: GERAN chairman (Ericsson)
- Goal is to discuss the ToRs update for moving GERAN into RAN.
- Output of the discussion should be a proposals for RAN#71
  => conclusion: Revised ToR were provided to RAN #70 in RP-160055 (for RAN), RP-160056 (for RAN5) and RP-160058 (for RAN6).

Annex H:
Actions decided by RAN #70

ACTION_ITEM_1:	Document on interaction plan with ITU-R for IMT-2020 (see RP-152228)
for:	RAN ITU-R ad hoc group/convener
task:	Prepare a living document with a plan for the 3GPP submission to IMT 2020 and, more in general, for the whole interaction with ITU-R WP5D (requirements, initial submission, final submission…) as input to RAN #71.
completion date:	RAN #71 => provided to RAN #71 in RP-160057
ACTION_ITEM_2:	WG chairs' plans on how to accomodate work on next generation (see RP-152228)
for:	RAN WG chairs (less critical for RAN5)
task:	RAN WG Chairs should start planning to accommodate after March a track for the work on the new radio and architecture, in addition to the existing WG capacity that will continue to be dedicated to the LTE evolution (and HSPA enhancements) and provide a corresponding input to RAN #71.
completion date:	RAN #71

Annex I:
History

Document history		
Date	**TSG RAN Tdoc**	**Subject**
06.12.2015	-	Skeleton report for RAN #70 provided before the meeting.
10.12.2015	-	Draft report of RAN #70 provided directly after RAN #70
22.01.2016	-	Draft report of RAN #70 v1.0 (revision marks compared to version of the end of the meeting)
05.03.2016	RP-160002	Draft report of RAN #70 v2.0 (revision marks compared to version 1.0)
07.03.2016	RP-160524	Report of RAN #70 as approved by RAN #71

In case of comments/questions/corrections please contact:

Author: **Dr. Joern Krause (3GPP TSG RAN MCC Support)**

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Tel. +33-492-94 4261
email: Joern.Krause@etsi.org

Appendix 28

www.3gpp.org / ftp / Specs / archive / 36_series / 36.300

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141 items.

Appendix 29

www.3gpp.org / ftp / Specs / archive / 36_series / 36.331

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36331-bd0.zip	2015/09/24 8:09	1150,3 KB
36331-be0.zip	2015/12/21 10:09	1149,7 KB
36331-bf0.zip	2016/03/30 16:40	1150,4 KB
36331-bg0.zip	2016/07/01 9:26	1174,1 KB
36331-bh0.zip	2016/12/30 1:35	1173,6 KB
36331-bi0.zip	2017/09/25 23:57	1163,8 KB
36331-bj0.zip	2018/07/08 20:20	1166,8 KB
36331-c00.zip	2014/01/07 18:09	1151,1 KB
36331-c10.zip	2014/03/19 14:00	1163,1 KB
36331-c20.zip	2014/07/04 13:08	1147,5 KB
36331-c30.zip	2014/09/23 13:38	1170,3 KB
36331-c40.zip	2015/01/05 16:30	1233,9 KB
36331-c41.zip	2015/01/07 8:40	1248,2 KB
36331-c50.zip	2015/03/27 9:37	1317,6 KB
36331-c60.zip	2015/06/30 22:43	1350 KB
36331-c70.zip	2015/09/24 8:34	1359,2 KB
36331-c80.zip	2015/12/28 14:24	1369,2 KB
36331-c90.zip	2016/03/30 16:48	1371,5 KB
36331-ca0.zip	2016/07/01 10:17	1368,7 KB

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36331-cb0.zip	2016/09/29 8:06	1385,7 KB
36331-cc0.zip	2017/01/12 22:35	1392,2 KB
36331-cd0.zip	2017/03/21 17:30	1378,2 KB
36331-ce0.zip	2017/06/24 10:44	1342,4 KB
36331-cf0.zip	2017/09/25 23:58	1346,2 KB
36331-cf1.zip	2017/09/29 10:09	1349,3 KB
36331-cg0.zip	2018/01/07 13:44	1355 KB
36331-ch0.zip	2018/07/08 20:21	1348,8 KB
36331-ci0.zip	2019/04/11 2:06	1403,6 KB
36331-cj0.zip	2020/10/02 13:18	1595 KB
36331-ck0.zip	2021/01/06 22:29	1603,9 KB
36331-d00.zip	2016/01/06 10:43	1369,3 KB
36331-d10.zip	2016/04/01 16:22	1442,5 KB
36331-d20.zip	2016/07/11 8:39	1586,4 KB
36331-d30.zip	2016/10/03 11:58	1617,2 KB
36331-d40.zip	2017/01/12 22:37	1617 KB
36331-d50.zip	2017/03/21 17:30	1602,5 KB
36331-d60.zip	2017/06/24 11:57	1514,9 KB
36331-d61.zip	2017/07/03 14:28	1514,9 KB
36331-d70.zip	2017/09/25 23:59	1519,3 KB
36331-d71.zip	2017/09/29 9:58	1519,5 KB
36331-d80.zip	2018/01/08 1:16	1524,7 KB
36331-d81.zip	2018/01/09 13:32	1526,6 KB
36331-d90.zip	2018/04/03 1:11	1566,9 KB
36331-d91.zip	2018/04/03 22:39	1530,5 KB
36331-da0.zip	2018/07/10 13:41	1531,3 KB
36331-db0.zip	2018/09/27 21:44	1547,7 KB
36331-dc0.zip	2019/01/16 21:06	1533,6 KB
36331-dd0.zip	2019/04/11 2:07	1752,9 KB
36331-de0.zip	2019/06/29 22:24	1740,3 KB
36331-df0.zip	2020/01/08 1:28	1747,5 KB
36331-dg0.zip	2020/10/02 17:55	1953,2 KB
36331-dh0.zip	2021/01/06 22:29	1964,3 KB
36331-e00.zip	2016/10/04 15:40	1639,2 KB

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36331-e20.zip	2017/03/23 5:56	1667,8 KB
36331-e21.zip	2017/03/23 15:20	1667,9 KB
36331-e22.zip	2017/04/20 21:46	1664,8 KB
36331-e30.zip	2017/07/13 0:14	1625,1 KB
36331-e40.zip	2017/09/26 0:00	1628,4 KB
36331-e50.zip	2018/01/08 1:17	1671,5 KB
36331-e51.zip	2018/01/09 13:33	1662,7 KB
36331-e60.zip	2018/04/03 1:12	1707,8 KB
36331-e61.zip	2018/04/03 22:39	1662,9 KB
36331-e62.zip	2018/04/04 9:36	1663,1 KB
36331-e70.zip	2018/07/10 13:43	1673,7 KB
36331-e80.zip	2018/09/27 21:50	1681,8 KB
36331-e90.zip	2019/01/16 21:07	1674,1 KB
36331-ea0.zip	2019/04/11 2:08	1930,2 KB
36331-eb0.zip	2019/06/29 22:25	1914,8 KB
36331-ec0.zip	2019/09/27 14:02	1915 KB
36331-ed0.zip	2020/01/08 1:28	1928,8 KB
36331-ee0.zip	2020/03/31 11:49	1946,6 KB
36331-ef0.zip	2020/10/02 18:04	2148,6 KB
36331-eg0.zip	2021/01/06 22:30	2152,9 KB
36331-eh0.zip	2024/07/12 20:36	2612,6 KB
36331-ei0.zip	2024/09/27 18:28	2607 KB
36331-f00.zip	2018/01/08 1:18	1674 KB
36331-f01.zip	2018/01/09 13:35	1674,1 KB
36331-f10.zip	2018/04/03 22:35	1693,3 KB
36331-f20.zip	2018/06/20 2:14	1706,2 KB
36331-f21.zip	2018/06/21 0:22	1706,2 KB
36331-f22.zip	2018/07/10 13:45	1715,6 KB
36331-f30.zip	2018/09/27 22:07	1961,6 KB
36331-f40.zip	2019/02/19 16:12	1992,7 KB
36331-f50.zip	2019/04/04 13:15	2334,5 KB
36331-f51.zip	2019/04/22 19:27	2327,1 KB
36331-f60.zip	2019/06/29 22:25	2359,6 KB

sort by name/desc	sort by date/desc	sort by size/desc
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36331-f80.zip	2020/01/08 1:41	2403,5 KB
36331-f90.zip	2020/03/31 10:42	2430,8 KB
36331-fa0.zip	2020/07/24 15:31	2461,5 KB
36331-fb0.zip	2020/10/05 17:42	2480,5 KB
36331-fc0.zip	2021/01/06 22:30	2490,5 KB
36331-fd0.zip	2021/03/30 9:00	3060,5 KB
36331-fe0.zip	2021/07/06 23:04	3062 KB
36331-ff0.zip	2021/09/29 20:17	3066 KB
36331-fg0.zip	2021/12/23 15:34	3066,8 KB
36331-fh0.zip	2022/04/13 21:40	3067,6 KB
36331-fi0.zip	2022/07/17 21:26	3068,3 KB
36331-fj0.zip	2022/09/30 17:52	3068,8 KB
36331-fk0.zip	2023/01/13 9:29	3065 KB
36331-fl0.zip	2023/09/27 21:13	3062,3 KB
36331-fm0.zip	2024/07/15 7:50	3079 KB
36331-fn0.zip	2024/09/27 18:28	3063,4 KB
36331-g00.zip	2020/04/06 14:19	2655,1 KB
36331-g10.zip	2020/07/24 15:32	2758,8 KB
36331-g11.zip	2020/07/26 22:34	2760,2 KB
36331-g20.zip	2020/10/06 17:47	4309,7 KB
36331-g21.zip	2020/10/07 22:04	2766,3 KB
36331-g30.zip	2021/01/06 22:31	2791 KB
36331-g40.zip	2021/03/30 10:27	3436,1 KB
36331-g50.zip	2021/07/06 23:04	3438,1 KB
36331-g60.zip	2021/09/29 20:17	3530,2 KB
36331-g70.zip	2021/12/23 15:34	3451,8 KB
36331-g80.zip	2022/04/14 9:28	3655,3 KB
36331-g90.zip	2022/07/17 21:27	3661,3 KB
36331-ga0.zip	2022/09/30 21:17	3663,3 KB
36331-gb0.zip	2023/01/13 9:29	3664,3 KB
36331-gc0.zip	2023/03/30 12:41	3665,5 KB
36331-gd0.zip	2023/09/28 12:30	3666,7 KB
36331-ge0.zip	2024/01/12 8:36	3670,1 KB

sort by name/desc	sort by date/desc	sort by size/desc
36331-gf0.zip	2024/04/05 6:25	3672,5 KB
36331-gg0.zip	2024/07/15 7:50	3679,2 KB
36331-gh0.zip	2024/09/27 19:37	3759,9 KB
36331-h00.zip	2022/04/13 23:20	3522,2 KB
36331-h10.zip	2022/07/20 9:02	3543,9 KB
36331-h20.zip	2022/10/04 6:46	3555,4 KB
36331-h30.zip	2023/01/13 19:01	3559,6 KB
36331-h40.zip	2023/03/30 23:05	3563,2 KB
36331-h50.zip	2023/07/04 15:29	3564,3 KB
36331-h60.zip	2023/09/28 18:43	3569,4 KB
36331-h70.zip	2024/01/15 8:57	3563,2 KB
36331-h80.zip	2024/04/04 21:07	3573 KB
36331-h90.zip	2024/07/12 20:15	3587 KB
36331-ha0.zip	2024/09/27 8:49	3660,6 KB
36331-i00.zip	2024/01/14 23:18	3599 KB
36331-i10.zip	2024/04/01 23:21	3613,1 KB
36331-i20.zip	2024/07/10 23:33	3602 KB
36331-i30.zip	2024/09/25 22:01	3609,2 KB
36331-i31.zip	2024/09/27 20:25	3600,7 KB

219 items.