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R2-1709516.zip	2017/08/11 15:38	277,2 KB

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2329 items.

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APPENDIX 32

Agenda Item: 2.2

Source: ETSI MCC

Title: Report of 3GPP TSG RAN2#99 meeting, Berlin, Germany

Document for: Approval

Report of 3GPP TSG RAN WG2 meeting #99
Berlin, Germany
21 - 25 August, 2017

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Organisation of the meeting

Meeting:	3GPP TSG RAN2#99	
Meeting location:	Berlin, Germany	
Duration:	21.08 - 25.08.2017	
Host:	EF3	
TSG RAN WG2 Chairman:	Richard Burbidge (Intel Corporation) (richard.c.burbidge@intel.com)	
TSG RAN WG2 Vice chairman:	Hu Nan (CMCC) (hunan@chinamobile.com)	
TSG RAN WG2 Vice chairman:	Diana Pani (Interdigital Communications (diana.pani@interdigital.com)	
TSG RAN WG2 MCC Support:	Juha Korhonen (ETSI MCC) (juha.korhonen@etsi.org)	
Email reflector:	3GPP_TSG_RAN_WG2@LIST.ETSI.ORG	
Technical documents:	ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_99/Docs	
Next meetings:	TSG RAN#77	11.09 - 14.09.2017, Sapporo, Japan
	TSG RAN2#99bis	09.10 - 13.10.2017, Prague, Czech Republic
	TSG RAN2#100	27.11 - 01.12.2017, Reno, USA

Statistics/Executive Summary

TSG RAN2#99 was held in Berlin, Germany, hosted by European Friends of 3GPP (EF3). The meeting had 6 breakout sessions in addition to the main session. The main session was mainly about NR. The parallel sessions were:

- LTE and NR User Plane;
- LTE
- NB-IoT and MTC
- Positioning Accuracy Enhancements
- Rel-15 V2X
- Rel-15 MTC

The statistics fom this meeting are:

- 269 participants checked in (registered: 343 participants).
- 2394 Tdocs allocated with 2368 available contributions. (See the attached tdoc list)
- 79 incoming liaison statements, out of which 72 were noted and 5 withdrawn (submitted for a second time by accident). The remaining 2 LSin will be handled in future meetings.
- 32 outgoing liaison statements.
- 49 email approvals/discussions scheduled after RAN2#99 meeting, see Annex F for details.
- Number of CRs submitted 366. Out of these, 119 were agreed. See Annex E for details.

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1 Opening of the meeting (9 AM)

1.1 Call for IPR

The attention of the delegates of this Working Group is drawn to the fact that **3GPP Individual Members have the obligation** under the IPR Policies of their respective Organizational Partners **to inform their respective Organizational Partners of Essential IPRs** they become aware of.

The delegates were asked to take note that they were hereby invited:

- to investigate whether their organization or any other organization owns IPRs which were, or were likely to become Essential in respect of the work of 3GPP.
- to notify their respective Organizational Partners of all potential IPRs, e.g., for ETSI, by means of the IPR Statement and the Licensing declaration forms (http://webapp.etsi.org/Ipr/).

NOTE: IPRs may be declared to the Director-General or Chairman of the SDO, but not to the RAN WG2 Chairman.

1.2 Network usage conditions

The PCG has laid down the following network usage conditions

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)

1.3 Other

In accordance with the Working Procedures it is reaffirmed that:

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

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

(iii) the chairman will conduct the meeting with strict impartiality and in the interests of 3GPP

Note on (i): In case of question please contact your legal counsel.

Note on (ii): WIDs don't need to be submitted to the RAN2 meeting and will typically not be discussed here either.

2 General

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

A draft schedule for the week is provided as a separate document, distributed via the RAN2 email reflector and made available during the meeting week in the RAN2\Inbox\Chairmans_Notes folder.

R2-1707600 Agenda for RAN2#99 Chairman agenda
=> Approved

2.2 Approval of the report of the previous meeting

R2-1707601 RAN2#98 meeting report MCC report
=> Approved
R2-1707602 RAN2 NR AdHoc#2 meeting report MCC report
=> Approved

2.3 Reporting from other meetings

Summary of RAN2 impacting NR items from RAN#76, June 2017 (same as sent via email to reflector)

NR

CSG - RAN agreed not to support CSG in NR Rel-15 but RAN2 is tasked to specify forward compatibility mechanisms so that a feature similar to the current CSG could be introduced in a future release (See RP-171479)

UE categories - In response to the questions raised in our LS, RAN concluded to let RAN WGs decide how the target peak data rate can be supported for LTE-NR DC and NR standalone (e.g. whether the existing concept of UE category is used or a new concept in defining the target peak data rate is introduced). In addition, RAN agreed to have an email discussion until RAN#77 to discuss the actual target peak data rates for LTE-NR DC and NR standalone. (See RP-171480)

Positioning - NR WID was updated to add support for positioning in order to meeting regulatory requirements related to emergency calls. The update assumes that LPP will be re-used to enable RAT independent positioning and RAT dependent positioning based on measurements of E-UTRA cells. (See revised WID in RP-171485) (Note that I do not plan to add positioning to the agenda for the June NR ad hoc)

NR ad hocs - We confirmed the need for a 5 day NR ad hoc in Q1 2018 (22-26 Jan 18) and a 5 day NR ad hoc in Q3 2018 (Date of 2-6 July 18 currently in 3GPP calendar is to be confirmed) (See RP-171509)

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LTE

LTE connected to 5G-CN - WID was updated to add support for inactive state (See revised WID in RP-171432)

UDC - The TR was approved but the SI is extended until September. RAN agreed that additional information on the APDC solution is to be provided to RAN2 by 2017-06-26. At the next RAN2 meeting, we will analyse this additional information and update the TR via CRs. RAN#77 will make a decision between DEFLATE based solution and APDC solution (unless RAN2 is able to make a quick and easy decision). 1 TU is allocated for this activity in RAN2#99. (See SR in RP-171464)

feD2D - No RAN2 time was allocated to feD2D SI in RAN2#99 but it was agreed that we can discuss and respond to incoming liaisons.

Technically endorsed CRs - All technically endorsed CRs provided from RAN2 to RAN were approved (The 2 sets relating to UE categories and the set on E-UTRAN sharing enhancements)

NB-IOT - The was a prioritisation of items within the Rel-15 NB-IoT WI. The intentions is that WGs provide running CRs for the prioritised items to RAN#78 (See revised WID in RP-171428)

CR submission to RAN

There have been a number of recent problems with CR submission to RAN plenary (involving RAN2 CRs as well as other WGs). Please read carefully the RAN secretary's email to the RAN WG reflectors. In summary, CR authors are requested to:

1 Subscribe also to the RAN reflector
2 Check the following for your CRs:
i/ correct submission of the agreed CR to the RAN
ii/ no clashes with other CRs that are for RAN approval
iii/ an error free implementation of the CR into the spec after approval
3 Inform MCC, the WG chairman and (if known) the spec rapporteur asap if you spot problems

2.4 Elections

Elections for the positions of Chairman and 2 Vice Chairmen will be held during the meeting.

2.5 Others

Rapporteur changes

Spec	former rapporteur	proposed new rapporteur

Isolated impact analysis

Note that an isolated impact analysis is required for Rel-8 to Rel-14 CRs from Q3 2017 onwards.

Only corrections where there is a proven problem are allowed for frozen releases (Rel-8 to Rel-14).

RAN2 WG compendium

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

Drafting rules

Note that specification drafting rules in TR 21.801 must be followed when drafting a CR and draft TS/TR.

Latest version can always be found at http://www.3gpp.org/ftp/specs/archive/21_series/21.801/

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Time Budget

The time budget endorsed at RAN-76 is available in RP-171478

Offline discussion during RAN2 meeting

Chairs will allocate a number of offline discussions during the meeting. Create a folder containing this number within inbox/drafts and use this to share any documents relating to the offline discussion. Also use this number in the title of any reflector emails relating to this offline discussion. Do not share documents over the reflector during the meeting.

Managing number of tdocs submitted to the meeting

Over 2000 documents submitted to this meeting. This continues to be an unmanageable number of documents, preventing to both chairs and delegates from adequately preparing for the meeting. If you have comments or suggestion how to manage this then please discuss with me during this week.

3 Incoming liaisons

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

R2-1707633 Reply to LS on EUTRAN sharing enhancement (R3-172026; contact: Ericsson) RAN3 LS in Rel-14 TEI14

=> Noted

R2-1707641 LS on EUTRAN sharing enhancement (S2-173701; contact: Ericsson) SA2 LS in Rel-15 TEI14

=> Noted

R2-1707646 LS on progress of enhanced VoLTE performance (S2-174844; contact: Huawei) SA2 LS in Rel-15 FS_eVoLP

- Huawei have prepared a draft response. Huawei think it is feasible for eNB to take this information into account.

=> Discuss offline whether we can respond now or RAN2 contributions will be needed before we can reply (Huawei, Offline discussion #01)

- Update from offline: Majority of companies think it is feasible for the eNB. One company thinks that it is RAN3 issue and another needs more time.
- Nokia think it may be feasible but we should not provide any feedback without assessment. Think it is a RAN3 question to comment on.
- Qualcomm think what they ask is more about RRM and hence RAN2 issue.

=> Reply to say: RAN2 have not concluded that this is feasible. One network vendors believe that it is feasible. We do not foresee any RAN2 spec impact.

=> Draft LS in R2-1709915 (Huawei, Offline discussion #52)

R2-1709915 [Draft] Reply LS on progress of enhanced VoLTE performance Huawei LS out

=> Approved in R2-1709975

R2-1707661 LS on eVoLP parameters (S4-AHM355; contact: Qualcomm) SA4 LS in Rel-15 FS_eVoLP

=> Noted

R2-1707655 LS on EPC QoS aspects for TSG RAN's lower latency features (S2-175276; contact: Ericsson) SA2 LS in Rel-15 LTE_sTTIandPT-Core, EDCE5, NR_newRAT-Core

- Ericsson draft in R2-1708319, and VDF reply in R2-1709670

=> Discuss offline how to respond and try to avoid overlap with aspects that RAN1 is expected to cover. (Ericsson, Offline discussion #02)

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R2-1709916 [Draft] Reply LS on EPC QoS aspects for TSG RAN's lower latency features, Ericsson, LS out
=> Change from divide to multiply
=> Approved in R2-1709976

R2-1707659 Reply LS on LTE call redirection to GERAN (S3-171554; contact: Ericsson) SA3 LS in Rel-12 TEI12
- Nokia think SA3 is having an e-meeting on this topic.
- Ericsson think the changes now discussed in SA3 would cause significant extra complexity in network and UE.

=> Noted

R2-1709883 LS to RAN2 on Text Proposals for 3GPP TR 36.746 (R1-1715120; contact: Intel)
- New LSin

✉ **[99#02][LTE/feD2D] Update to 36.746 (LG)**
To add TP from RAN1
Intended outcome: Agreed TR v2.0.0 for submission to RAN for approval
Deadline: Thursday 2017-08-31

=> The TR is agreed in R2-1709984.

Liasons with RAN2 in CC

R2-1707632 Reply LS on MBMS Bearer Event Notification (R3-172007; contact: Ericsson) RAN3 LS in Rel-15 MBMS_Mcservices, TEI15

=> Noted

R2-1707662 Reply LS to RAN3 on MBMS bearer event notification (S6-171129; contact: Motorola Solutions) SA6 LS in Rel-15 MBMS_Mcservices

=> Noted

Withdrawn

R2-1707608 LS on the conclusions for the SI on a simplified HS-SCCH for UMTS (R1-1709326; contact: Ericsson) RAN1 LS in Rel-15 FS_UTRA_simple_HSSCCH

R2-1707610 LS on enhanced scheduling for UMTS (R1-1709567; contact: Huawei) RAN1 LS in Rel-15 FS_UTRA_CA_sched_enh

4-5 Void

6 LTE: Rel-12 and earlier releases

Including corrections related to the following WIs:

(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)

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(eICIC_LTE-Core, leading WG: RAN1, REL-10, started: March 10, closed: June 11, WID: RP-100383)

(SONenh_LTE-Core, leading WG: RAN3, REL-10, started: March 10, closed: June 11, WID: RP-101004)

(LTE_CA_enh-Core, leading WG: RAN1, REL-11, started: March 11, closed: Mar.13, WID: RP-121999)

(MBMS_LTE_SC-Core, leading WG: RAN2, REL-11, started: June 10, closed: Sep.12, WID: RP-120258)

(LTE_eDDA-Core, leading WG: RAN2, REL-11, started: March 11, closed: Dec.12, WID: RP-120256)

(LCS_LTE-NBPS-Core, leading WG: RAN2, REL-11, started: March 09, closed: June. 13, WID: RP-131259)

(eICIC_enh_LTE-Core, leading WG: RAN1, REL-11, started: March 11, closed: Dec. 12, WID: RP-120860)

(SPIA_IDC_LTE-Core, leading WG: RAN2, REL-11, started: Sep.11, closed: Dec. 12, WID: RP-111355)

(COMP_LTE_DL-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111365)

(COMP_LTE_UL-Core, leading WG: RAN1, REL-11, started: Sep.11, closed: Dec.12, WID: RP-111365)

(LTE_TDD_add_subframe, leading WG: RAN1, REL-11, started: March 12; closed: Sep. 12, WID: RP-120384)

(FS_HetNet_eMOB_LTE, leading WG: RAN2, REL-11, started: March 11, closed: Sep. 12, WID: RP-110709)

(LTE_enh_dl_ctrl-Core, leading WG: RAN1, REL-11, started: Dec. 11, closed: Dec. 12, WID: RP-120871)

(LTE_SC_enh_dualC-Core, leading WG: RAN2, REL-12, started: Dec.13, closed: Dec.14, WID: RP-141797)

(LTE_SC_enh_L1-Core, leading WG: RAN1, REL-12, started: Dec.13, closed: Dec.14, WID: RP-132073)

(LTE_D2D_Prox-Core, leading WG: RAN1, REL-12, started: Mar.14, closed: Mar.15, WID: RP-142043)

(MBMS_LTE_OS-Core, leading WG: RAN2, REL-12, started: Sep.13, closed: Dec.14, WID: RP-140282)

(LTE_NAICS-Core, leading WG: RAN1, Rel-12, started: Mar 14, closed: Dec.14, WID: RP-140519)

(LC_MTC_LTE-Core, leading WG: RAN1, REL-12, started: Jun 13, closed: Dec 14, WID: RP-140522)

(GCSE_LTE-MBMS_CM-Core, leading WG: RAN3, started: Sep. 14, closed: Mar. 2015, WID: RP-141035)

(LTE_CA_TDD_FDD-Core, leading WG: RAN1, REL-12, started: Jun 13, closed: Jun 14, WID: RP-140465)

(LCS_BDS-LTE-Core, leading WG: RAN2, REL-12, started: Mar 13, closed: Dec 13, WID: RP-130416)

(LTE_eDL_MIMO_enh-Core, leading WG: RAN1, REL-12, started: Sep 12, closed: June 14, WID: RP-121416)

(HetNet_eMOB_LTE-Core, leading WG: RAN2, REL-12, started: Dec.12, , closed: Sep 14, WID: RP-122007)

(Cov_Enh_LTE-Core, leading WG: RAN1, REL-12, started: Jun.13, closed: Jun.14, WID: RP-130833)

(LTE_TDD_eIMTA-Core, leading WG: RAN1, REL-12, started: Dec 12, closed: Jun.14, WID: RP-121772)

(SCM_LTE-Core, leading WG: RAN2, REL-12, started: Mar.14, closed: Sep.14, WID: RP-140434)

Including any LTE corrections related to the following joint UMTS/LTE WIs:

(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)

(EHNB_enh3-Core, leading WG: RAN3, REL-12, started: Sep.12, closed: Dec 13, WID: RP-130741)

(MTCe_RAN-Core, leading WG: RAN2, REL-12, started: Dec.13, closed: Sep.14, WID: RP-132053)

(UTRA_LTE_WLAN_interw-Core, leading WG: RAN2, REL-12, started: Dec.13, closed: Sep.14, WID: RP-132101)

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(LTE_UTRA_IncMon-Core, leading: RAN4, REL-12, started: Dec.13, closed: Dec. 14, WID: RP-132061)

Including output from email discussion [98#41][LTE] NS extension (Nokia)

R2-1708477 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
36.331 10.20.0 2998 C Rel-10 TEI10

- Ericsson provide an alternative approach in R2-1709534 but it is quite different and can withdraw the proposal.
- Nokia explain there could be a need to merge with PUCCH CRs
- Samsung ask is a UE capability is needed for this. Nokia understand it will be related to band support so UEs with certain bands will need to support these extensions. Hence no UE capability signalling needed.

=> Check whether a merge with other CRs is needed. UE capability aspect can be discussed offline. (Offline discussion #29)
=> Revised in R2-1709836

R2-1709836 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
Rel-10 36.331 10.20.0 TEI10 2998 1 C

- Nokia explain it ws concluded not to add any UE capability information.

=> Agreed, but then revised:
[MCC]: The cover sheet had wrong WI code (should be TEI10).
=> Agreed in R2-1709856.

R2-1708478 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
36.331 11.17.0 2999 C Rel-11 TEI11
=> Revised in R2-1709837

R2-1709837 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
Rel-11 36.331 11.17.0 TEI11 2999 1 C
=> Agreed, but then revised:
[MCC]: The cover sheet had wrong WI code and category.
=> Agreed in R2-1709857.

R2-1708479 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
36.331 12.14.0 3000 C Rel-12 TEI12
=> Revised in R2-1709838

R2-1709838 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
Rel-12 36.331 12.14.0 TEI12 3000 1 C
=>Agreed, but then revised:
[MCC]: The cover sheet had wrong WI code, category and spec version,
=> Agreed in R2-1709858.

R2-1708480 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
36.331 13.6.1 3001 C Rel-13 TEI13
=> Revised in R2-1709839

R2-1709839 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
Rel-13 36.331 13.6.1 TEI13 3001 1 C
=> Agreed, but then revised:
[MCC]: The cover sheet had wrong WI code and category.
=> Agreed in R2-1709859.

R2-1708481 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
36.331 14.3.0 3002 C Rel-14 TEI14
=> Revised in R2-1709840

R2-1709840 Additional Spectrum Emission value range extension Nokia, Nokia Shanghai Bell CR
Rel-14 36.331 14.3.0 TEI14 3002 1 C

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=> Agreed, but then revised:
[MCC]: The cover sheet had wrong WI code and category.
=> Agreed in R2-1709860.

R2-1709841 [DRAFT] LS reply on extension of NS and CA_NS signalling space Nokia LS out Rel-14 TEI14
To:RAN4
=> Approved in R2-1709977

R2-1709534 Extension of NS value in RRC signalling Ericsson discussion
Rel-14 TEI14
=> Noted

Moved from 8.25 to 6

R2-1709535 DRAFT LS reply on extension of NS and CA_NS signalling space Ericsson discussion
Rel-14 TEI14

Moved from 8.25 to 6

R2-1708030 Clarification on TAT restart without valid TA value MediaTek Inc. CR 36.321 12.9.0 1140
F Rel-12 LTE_SC_enh_dualC-Core
- Huawei think the existing note is sufficient.
- LG think more checking is required.
- Nokia thinks it is aligned with the discussion we had in Rel-12
=> Offline discussion to conclude whether the CR is needed (MediaTek, Offline discussion #03)
=> Revised in R2-1709877

R2-1709877 Clarification on TAT restart without valid TA value MediaTek Inc. CR Rel-12 36.321
12.9.0 LTE_SC_enh_dualC-Core 1140 1 F
=> Agreed

R2-1709878 Clarification on TAT restart without valid TA value MediaTek Inc. CR Rel-13 36.321
LTE_CA_enh-Core, TEI12 1183 A
=> Revised to R2-1709932

R2-1709932 Clarification on TAT restart without valid TA value MediaTek Inc. CR Rel-13 36.321
LTE_CA_enh-Core, TEI12 1183 1A
=> Agreed

R2-1709879 Clarification on TAT restart without valid TA value MediaTek Inc. CR Rel-14 36.321
LTE_CA_enh-Core, TEI12 1184 A
=> Revised to R2-1709933

R2-17099933 Clarification on TAT restart without valid TA value MediaTek Inc. CR Rel-14 36.321
LTE_CA_enh-Core, TEI12 1184 A
=> Agreed

R2-1708859 Correction on SR prohibit Huawei, HiSilicon, Nokia Shanghai Bell CR 36.321 12.9.0 1153
F Rel-12 TEI12
- LG agree the current text is misleading and the CR is ok
=> Agreed

R2-1708872 Correction on SR prohibit Huawei, HiSilicon, Nokia Shanghai Bell CR 36.321 13.6.0 1154
A Rel-13 TEI12
=> Agreed

R2-1708889 Correction on SR prohibit Huawei, HiSilicon, Nokia Shanghai Bell CR 36.321 14.3.0 1155
A Rel-14 TEI12
=> Agreed

R2-1709015 Correction in PUSCH Config description Qualcomm Korea CR 36.331 12.14.0 3017
F Rel-12 LTE_SC_enh_dualC-Core

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=> Agreed

R2-1709010 Correction in PUSCH Config description Qualcomm Korea CR 36.331 13.6.1 3016 F Rel-13 LTE_CA_enh_b5C-Core, LTE_SC_enh_dualC-Core

=> Agreed

R2-1709021 Correction in PUSCH Config description Qualcomm Korea CR 36.331 14.3.0 3018 A Rel-14 LTE_CA_enh_b5C-Core, LTE_SC_enh_dualC-Core

=> Agreed

R2-1709050 Clarification on MBMS reception with 256QAM Intel Corporation CR 36.306 12.12.0 1496 F Rel-12 LTE_SC_enh_L1-Core

- LG wonder if there is a problem in Rel-14 as there could be UEs without any unicast capability but this CR would prevent this.

=> Impact analysis to be added to the cover page

=> Discuss offline the potential issue with the CR preventing a broadcast only UE. (Intel, Offline discussion #04).

=> Revised R2-1709852

R2-1709852 Clarification on MBMS reception with 256QAM Intel Corporation CR Rel-12 36.306 12.12.0 LTE_SC_enh_L1-Core 1496 1 F

=> Revised on R2-1709919

R2-1709919 Clarification on MBMS reception with 256QAM Intel Corporation CR Rel-12 36.306 12.12.0 LTE_SC_enh_L1-Core 1496 1 F

=> Agreed

R2-1709051 Clarification on MBMS reception with 256QAM Intel Corporation CR 36.306 13.6.0 1497 A Rel-13 LTE_SC_enh_L1-Core

=> Revised R2-1709853

R2-1709853 Clarification on MBMS reception with 256QAM Intel Corporation CR Rel-13 36.306 13.6.0 LTE_SC_enh_L1-Core 1497 1 A

=> Revised on R2-1709920

R2-1709920 Clarification on MBMS reception with 256QAM Intel Corporation CR Rel-13 36.306 13.6.0 LTE_SC_enh_L1-Core 1497 1 A

=> Agreed

R2-1709052 Clarification on MBMS reception with 256QAM Intel Corporation CR 36.306 14.3.0 1498 A Rel-14 LTE_SC_enh_L1-Core

=> Revised R2-1709854

R2-1709854 Clarification on MBMS reception with 256QAM Intel Corporation CR Rel-14 36.306 14.3.0 LTE_SC_enh_L1-Core 1498 1 A

=> Revised on R2-1709923

R2-1709923 Clarification on MBMS reception with 256QAM Intel Corporation CR Rel-14 36.306 14.3.0 LTE_SC_enh_L1-Core 1498 1 A

=> Agreed

R2-1709349 Correction on SR triggering Huawei, HiSilicon CR 36.321 12.9.0 1165 F Rel-12 TEI12

- Ericsson think it is not needed and the change is very confusing with and or in a single sentence.
- LG think this is already very clear from RRC.

=> Not pursued

R2-1709350 Correction on SR triggering Huawei, HiSilicon CR 36.321 13.6.0 1166 A Rel-13 TEI12

=> Not pursued

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R2-1709351 Correction on SR triggering Huawei, HiSilicon CR 36.321 14.3.0 1167 A Rel-14 TEI12

=> Not pursued

R2-1709533 Secured redirect to GERAN Ericsson discussion Rel-12 TEI12

- Nokia think SA3 is still discussing other methods. For this approach the key part to be done is in CT1. Ericsson think there will need to be some procedure text in RRC.
- Nokia suggest to wait for SA3 response and draft CRs at next meeting.

=> Wait for response from SA3 and CT1 before progressing.

=> Noted

Late

R2-1707812 Addition of extended NS values and correction to PUCCHConfig-Dedicated Nokia, Nokia Shanghai Bell CR 36.331 13.6.1 2969 F Rel-13 TEI10, LTE_CA_enh_b5C-Core

R2-1707813 Addition of extended NS values and correction to PUCCHConfig-Dedicated Nokia, Nokia Shanghai Bell CR 36.331 14.3.0 2970 A Rel-14 TEI10, LTE_CA_enh_b5C-Core

R2-1709213 Configuration continuity Nokia, Nokia Shanghai Bell CR 36.331 10.20.0 3031 F Rel-10 TEI10

R2-1709214 Configuration continuity Nokia, Nokia Shanghai Bell CR 36.331 11.17.0 3032 A Rel-11 TEI10

R2-1709215 Configuration continuity Nokia, Nokia Shanghai Bell CR 36.331 12.14.0 3033 A Rel-12 TEI10

R2-1709216 Configuration continuity Nokia, Nokia Shanghai Bell CR 36.331 13.6.1 3034 A Rel-13 TEI10

R2-1709217 Configuration continuity Nokia, Nokia Shanghai Bell CR 36.331 14.3.0 3035 A Rel-14 TEI10

R2-1709556 Introduce a specific S1AP cause value for nonstandard UEs CMCC discussion

7 LTE: Rel-13

7.1 WI: Licensed-Assisted Access using LTE

(LTE_LAA-Core, leading WG: RAN1, REL-13; started: June 15, closed: Dec. 15, WID: RP-151045)

R2-1708943 RRM Measurement Clarification on Discovery Signals for LAA Qualcomm Korea CR 36.331 13.6.1 3013 F Rel-13 LTE_LAA-Core

- Nokia think the intent is ok but the wording is very strange. Nokia understand that it is used also for RRM and not only for RRM. If DTMC is defined it should be used for CSI as well as RRM reporting.

=> Offline discussion to conclude the wording (Qualcomm, Offline discussion #05)

=> Revised in R2-1709875

R2-1709875 RRM Measurement Clarification on Discovery Signals for LAA Qualcomm Incorporated CR Rel-13 36.331 13.6.1 LTE_LAA-Core 3013 1 F

=> Impact analysis to be added

=> Agreed in R2-1709924

R2-1708972 RRM Measurement Clarification on Discovery Signals for LAA Qualcomm Incorporated CR 36.331 14.3.0 3014 A Rel-14 LTE_LAA-Core

=> Revised in R2-1709876

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R2-1709876 RRM Measurement Clarification on Discovery Signals for LAA Qualcomm IncorporatedCR
Rel-14 36.331 14.3.0 LTE_LAA-Core 3014 1 A

=> Change marks need to be used
=> Agreed in R2-1709922

7.2 WI: Further LTE Physical Layer Enhancements for MTC

(LTE_MTCe2_L1-Core, leading WG: RAN1, REL-13; started: Sep. 14, closed: Mar. 16, WID: RP-150492)

Documents in this agenda item will be handled in a break out session

Incoming LS

R2-1707635 LS on RSRP range (R4-1706175; contact: Huawei) RAN4 LS in Rel-13
LTE_MTCe2_L1-Core To:RAN2

⇒ **Already treated last meeting, Noted**

Other

R2-1708242 Capability differentiation between CE and non-CE modes Qualcomm Incorporateddiscussion
Rel-13 LTE_MTCe2_L1-Core

- Intel has concerns with this proposal and don't think there is an issue, and would prefer to analyse this case by case and think capabilities can be introduced if needed. LG agrees with Intel.
- LG think higher layer capabilities is the same for CE modes.
- QC think that e.g. tm9 could be a capability that need differentiation.
- Chair think that the only way forward is to treat the current problem cases specifically, i.e. the option 1, and there is no opposition to fixing specific issues.

⇒ **Noted**

R2-1709887 No support of TM9 in Rel-13 CE Mode Qualcomm Inc CR Rel-13 36.331 13.6.1
LTE_MTCe2_L1-Core 3066 F

- Intel have not been involved in offline and would like to check. Suggests email discussion to next meeting and the scope should include to identify the features which should be a first phase. Huawei agrees to discuss by email, have not seen this before.
- Ericsson think the points of QC makes sense but would like to discuss details.
- Nokia also agrees with the intention but are ok with an email discussion

R2-1709888 No support of TM9 in Rel-13 CE Mode Qualcomm Inc CR Rel-13 36.306 13.6.0
LTE_MTCe2_L1-Core 1505 F

R2-1709889 TM9 capabilities in CE mode Qualcomm Inc CR Rel-14 36.306 14.3.0
LTE_MTCe2_L1-Core 1506 F

R2-1709890 TM9 capabilities in CE mode CR Rel-13 36.331 14.3.0 LTE_MTCe2_L1-Core 3067
F

4 tdocs above for email approval:

✉ **[99#15][MTC] UE capabilities for tm9 (Qualcomm)**
Objective to discuss and agree CRs to 36.331 and 36.306 for Rel-13 and Rel-14, based on R2-1709887, R2-1709888, R2-1709889, R2-1709890

=> The CRs are agreed in R2-1709985, R2-1709986, R2-1709987 and R2-1709988.

R2-1708354 Clarification on SI repetition pattern NTT DOCOMO INC. CR Rel-13 36.331
13.6.1 LTE_MTCe2_L1-Core, NB_IOT-Core 2991 F

- Intel think this has been discussed several times, so they have sympathy for this, as we should have this change. LG also support. ZTE also support.
- Blackberry also think there is room for improvement as the reference for the transmission seems missing.

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- Nokia think that there should not be two “starting” in the NB-IoT text. This is confusing. Nokia think we should be careful to not change rel-8 texts.
- QC think this is already quite clear, and that the suggested change actually makes it less clear. If we change we should have a different wording. Huawei think nothing need to be clarified.
- QC would prefer to include the following: “The first transmission of the SI message happens in the first radio frame of the SI window”
- Huawei think this is not critical and would like to not have it for Rel-13.

⇒ **We aim to make clarification for NB-IoT and MTC, while we don’t change Rel-8 text.**

⇒ **Revised in R2-1709708 (rev 1)**

R2-1709708 Clarification on SI repetition pattern NTT DOCOMO INC. CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core, NB_IOT-Core 2991 1 F

- In the first and second changes remove the word “repetition”, and add a “the” in front of “SI message”.
- Huawei think that now the text is so similar to the original text so it is not useful to change.

⇒ **Revised in R2-1709732 (rev 2) which is agreed unseen.**

R2-1708355 Clarification on SI repetition pattern NTT DOCOMO INC. CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core, NB_IOT-Core 2992 A

⇒ **Revised in R2-1709709 (rev 1)**

R2-1709709 Clarification on SI repetition pattern NTT DOCOMO INC. CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core, NB_IOT-Core 2992 A

⇒ **Revised in R2-1709970 (rev 2) which is agreed unseen.**

R2-1709189 Clarification on the freqHoppingParametersDL during handover Intel Corporation CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3024 F

- Proposal in the CR is 1.a
- The current issue that need code OR triggers the UE to release the value even though it might be provided by another way.
- Ericsson wonders if we could have condition HO2 instead as HO is used elsewhere.
- Cover page should only describe the problem/solution in the CR.

⇒ **There is an issue, and we will fix it.**

⇒ **Revised in R2-1709710 (rev 1)**

R2-1709710 Clarification on the freqHoppingParametersDL during handover Intel Corporation CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3024 1 F

- Intel clarifies that the RRC rapporteur has reviewed the CRs.

⇒ **Agreed**

R2-1709190 Clarification on the freqHoppingParametersDL during handover Intel Corporation CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3025 A

⇒ **Revised in R2-1709711 (rev 1)**

R2-1709711 Clarification on the freqHoppingParametersDL during handover Intel Corporation CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3025 A

⇒ **Agreed**

R2-1709191 Clarification on rsrp-ThresholdsPrachInfoList during handover Intel Corporation CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3026 F

- QC and Huawei think that condition MP should be used instead.

⇒ **Revised in R2-1709712 (rev 1)**

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R2-1709712 Clarification on rsrp-ThresholdsPrachInfoList during handover Intel Corporation CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3026 1 F

⇒ **agreed**

R2-1709192 Clarification on rsrp-ThresholdsPrachInfoList during handover Intel Corporation CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3027 A

⇒ **Revised in R2-1709713 (rev 1)**

R2-1709713 Clarification on rsrp-ThresholdsPrachInfoList during handover Intel Corporation CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3027 1 A

⇒ **agreed**

R2-1709196 Clarification on number of RACH CE levels vs number of RSRP thresholds Intel Corporation CR Rel-13 36.321 13.6.0 LTE_MTCe2_L1-Core 1161 F

- Chair wonders if this is a case of wrong configuration or not?
- Huawei clarifies that the clarification was done in MAC for NB-IoT because for RRC there is no concept of CE levels.

⇒ **Preference to have clarification in RRC instead of MAC, if needed.**

⇒ **Not pursued**

⇒ **RRC CR in R2-1709714 / R2-1709715**

R2-1709197 Clarification on number of RACH CE levels vs number of RSRP thresholds Intel Corporation CR Rel-14 36.321 14.3.0 LTE_MTCe2_L1-Core 1162 A

⇒ **Not pursued**

R2-1709714 Clarification on number of RACH CE levels vs number of RSRP thresholds Intel Corporation CR Rel-13 36.331 13.x.x LTE_MTCe2_L1-Core xxxx F

⇒ **Agreed**

R2-1709715 Clarification on number of RACH CE levels vs number of RSRP thresholds Intel Corporation CR Rel-14 36.331 14.x.x LTE_MTCe2_L1-Core xxxx A

⇒ **Agreed**, but then revised:
[MCC]: The coversheet is for Rel-13, needs an update.

⇒ **Agreed in R2-1709759.**

R2-1709198 Adding reference to SystemInformationBlockType1-BR to the section on cell status and cell reservations Intel Corporation CR Rel-13 36.304 13.6.0 LTE_MTCe2_L1-Core 0385 F

⇒ **Agreed**

R2-1709199 Adding reference to SystemInformationBlockType1-BR to the section on cell status and cell reservations Intel Corporation CR Rel-14 36.304 14.3.0 LTE_MTCe2_L1-Core 0386 A

⇒ **Agreed**, but then revised:
[MCC]: Wrong CR number, should be 0386

⇒ **Agreed in R2-1709757**

R2-1709200 Clarification on Bandwidth Reduced operation Intel Corporation CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3029 F

- Ericsson think many of the changes are not needed.
- Chair think the conditions need to be changed.
- QC would be ok with the first change

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- Chair think that the main problem is just that UE in CE should regard the cell as barred only as long as the UE is in CE. Huawei think this is clear already, as it refers to “UE in CE”.

⇒ **Revised in R2-1709730**

R2-1709730 Clarification on Bandwidth Reduced operation Intel Corporation CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3029 F

First change
- Nokia think that the first change in not needed and that the previous text is clear.
- Intel clarifies also that the “for CE operation” refers to both UEs in enhanced coverage and UEs in normal coverage using reduced bandwidth.
- Chair think that the current text doesn’t work for the case of UEs in normal coverage using reduced bandwidth.
- Nokia think that “barred for CE operation does not cover the intention and is unclear”
- Intel proposes to change “for CE operation” to “for BR operation” for clarity, but could also be OK to just remove the word “operation”.
- “in CE” when the UE is in normal coverage is unclear but can be clarified later.
- QC think we can make the changes at next meeting.
- Huawei think that we agree that the UE should not bar WB operation.

Second change
- Seems ok to everyone

⇒ **Agree that we correct the second change now, postpone the first**

⇒ **Revised in R2-1709808 (rev 2)**

R2-1709808 Clarification on Bandwidth Reduced operation Intel Corporation CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3029 2 F

⇒ **Agreed unseen**

R2-1709201 Clarification on Bandwidth Reduced operation Intel Corporation CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3030 A

⇒ **revised**

R2-1709809 Clarification on Bandwidth Reduced operation Intel Corporation CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3030 2 A

⇒ **Agreed unseen**, but then revised:
[MCC]: Wrong revision number
=> Agreed in R2-1709824.

✉ **[99#40][MTC] Email discussion on UE in CE (Intel)**
Objective to clarify UE in CE and the Tentative Issue that a UE in CE may bar a cell also for non-CE/BR operation.

R2-1709195 Clarification on systemInformationBlockType2Dedicated Intel Corporation CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3028 F

The above tdoc was moved to this AI

- LG wonders if there is a problem when this is included in Handover
- Intel think that there would be ambiguity that UE receives the same information by two different fields, and if we introduce this condition we don’t need to specify how the UE shall behave.

⇒ **Agreed**

R2-1709253 Clarification on UE behaviour for Contention Resolution with Padding Qualcomm Incorporated CR Rel-14 36.321 14.3.0 LTE_feMTC-Core 1164 F

- LG think that the NOTE should be only for MTC. QC agrees. Ericsson disagrees. The note should be general.

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- Huawei wonder if this is likely to happen in practice.
- Blackberry think a Note should not have the word “shall”
- Format should be NOTE: …
- Check spelling.

⇒ **Revised in R2-1709716 (rev 1)**

R2-1709716 Clarification on UE behaviour for Contention Resolution with Padding Qualcomm Incorporated CR Rel-14 36.321 14.3.0 LTE_feMTC-Core 1164 1 F

⇒ **Agreed**

R2-1709289 Target cell optional PBCH repetition status indication Qualcomm Incorporated CR Rel-14 36.331 14.3.0 LTE_feMTC-Core 3037 F

- Intel wonders if this is related to SFN CR, and if related why not use the HO condition for SFN that was used? QC explains that SFN can be same but PBCH repetitions can be same or different. QC think it is not related to the SFN.
- Huawei think this is pointless to have a separate indication, and that the same-SFN indication is exactly to not need to read MIB.
- Ericsson wonders if this is an optimization or a correction? Ericsson think it works without it.
- Chair wonders if companies are ready to agree that same SFN indication would also have the meaning of same PBCH repetition pattern? Intel think this is OK. Ericsson think not. Ericsson would like to think more. Huawei may be ok with that.

After offline

- QC think there could be consensus now, maybe except for Huawei. Ericsson agree with the QC proposal.
- Huawei agree there is unclarity and agree the UE should know.
- Chair wonders if this is useful to have two bits. LG think “same-SFN” indication would be sufficient.

⇒ **The UE should know whether PBCH/MIB need to be acquired in the target cell**

⇒ **postpone**

R2-1709379 Corrections on TS 36.321 for Rel-13 MTC Huawei, HiSilicon CR Rel-13 36.321 13.6.0 LTE_MTCe2_L1-Core, NB_IOT-Core 1175 F

- LG think that for the first change SL should maybe not be mentioned. Huawei agrees.
- Intel think that for the first change this is already clear in the DRX section.
- QC think that for the first change it should refer to PDCCH reception.
- QC think that CE level is sufficiently clear.
- Ericsson think that we had CE-level in MAC but was changed to coverage level to avoid collision with control element.

⇒ **First change: Remove SL and add “reception” after PDCCH**

⇒ **Revised in R2-1709717 (rev 1)**

R2-1709717 Corrections on TS 36.321 for Rel-13 MTC Huawei, HiSilicon CR Rel-13 36.321 13.6.0 LTE_MTCe2_L1-Core, NB_IOT-Core 1175 1 F

⇒ **agreed**

R2-1709380 Corrections on TS 36.321 for Rel-13 MTC Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_MTCe2_L1-Core, NB_IOT-Core 1176 A

⇒ **Revised in R2-1709718 (rev 1)**

R2-1709718 Corrections on TS 36.321 for Rel-13 MTC Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_MTCe2_L1-Core, NB_IOT-Core 1176 1 A

⇒ **agreed**

R2-1709381 Corrections on TS 36.331 for Rel-13 MTC Huawei, HiSilicon CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3043 F

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- QC think the first correction is not correct.
- Ericsson wonders what is the default value n3. Huawei and QC confirms that this was a R1 decision.
- Spelling error in the FD for prach-StartingSubframe: determined

⇒ **Check the first change offline (offline disc 309), fix the spelling mistake**

⇒ **Revised in R2-1709719 (rev 1)**

R2-1709719 Corrections on TS 36.331 for Rel-13 MTC Huawei, HiSilicon CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core 3043 1 F

- QC wonders if the network repeats in both subframes or can repeat in only one but not the other. Huawei think that either the additional repetitions are performed in all repetition "occasions" or not at all.
- Huawei think that the QC question is related to R1 TSes.
- Chair think that companies can check whether this is specified in R1 specs or not and bring contributions if there is a need to add something. The current tdoc doesn't attempt to clarify this aspect.

⇒ **Agreed**

R2-1709382 Corrections on TS 36.331 for Rel-13 MTC Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3044 A

⇒ **Revised in R2-1709720 (rev 1)**

R2-1709720 Corrections on TS 36.331 for Rel-13 MTC Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core 3044 1 A

⇒ **Agreed**

R2-1709383 Corrections on logical channel for Rel-13 MTC Huawei, HiSilicon CR Rel-13 36.322 13.3.0 LTE_MTCe2_L1-Core 0128 F

- QC wonders if this is a Cat F CR. Chair think Cat F is ok

⇒ **Agreed**

R2-1709384 Corrections on logical channel for Rel-13 MTC Huawei, HiSilicon CR Rel-14 36.322 14.0.0 LTE_MTCe2_L1-Core 0129 A

⇒ **Agreed,** but then revised:
[MCC]: Wrong spec version

⇒ **Agreed in R2-1709758**

R2-1709385 Corrections on paging monitoring in RRC_CONNECTED in Rel-13 eMTC and NB-IoT Huawei, HiSilicon CR Rel-13 36.331 13.6.1 LTE_MTCe2_L1-Core, NB_IOT-Core 3045 F

- LG would like to correct a spelling mistake in 5.2.1.3, "that" should be "than".
- Blackberry think the text is unclear.
- Intel like the CR but think it is not consistent with agreements, as UEs could be capable to receive ETWS and CMAS, and could receive this although not mandated. Intel think we have agreed to not preclude this.

⇒ **postponed**

R2-1709726 Paging monitoring in RRC_CONNECTED in Rel-13 MTC Huawei, HiSilicon

- Huawei's main point is that paging and CMAS/ETWS in connected would at best be unreliable.
- Intel has now checked and would be ok with the proposal.
- Ericsson think that the network doesn't know this UE capability and cannot release the correct UEs to Idle for.
- Docomo think that UEs in Connected shall be able to receive ETWS. Propose to postpone

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⇒ **Postpone this discussion**

⇒ **noted**

R2-1709386 Corrections on paging monitoring in RRC_CONNECTED in Rel-13 eMTC and NB-IoT
Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_MTCe2_L1-Core, NB_IOT-Core 3046 A

⇒ **postponed**

R2-1709387 Corrections on paging monitoring in RRC_CONNECTED in Rel-13 eMTC and NB-IoT
Huawei, HiSilicon CR Rel-13 36.300 13.8.0 LTE_MTCe2_L1-Core, NB_IOT-Core 1054 F

⇒ **postponed**

R2-1709388 Corrections on paging monitoring in RRC_CONNECTED in Rel-13 eMTC and NB-IoT
Huawei, HiSilicon CR Rel-14 36.300 14.3.0 LTE_MTCe2_L1-Core, NB_IOT-Core 1055 A

⇒ **postponed**

7.3 WI: Narrowband IOT

(NB_IOT-Core; leading WG: RAN1; started: Sep. 15; target: Jun. 16; WID: RP-152284)

Documents in this agenda item will be handled in a break out session

Incoming LS

R2-1707611 Monitoring of partial NPDCCH search spaces (R1-1709716; contact: Qualcomm) RAN1 LS in Rel-13 NB_IOT-Core To:RAN2

⇒ **Already treated and responded to at last meeting**

R2-1709882 Support of early contention resolution in NB-IoT (R1-1714719; contact: Qualcomm)

- QC clarifies that early contention resolution means that contention resolution ID is sent by itself in a separate DL transmission.
- QC think there will need to be a CR to 36.300 for this and will bring a proposal to next meeting.
- Some discussion followed, the problem is that CSS is not monitored after RACH procedure end so the RRC message that configured USS must be sent together with contention resolution ID. This dependency between L1 and L2 is only for NB-IoT

⇒ **We take this into account.**

⇒ **Noted**

Other

R2-1707861 RoHC profile support for CIoT-only NB-IoT UE Qualcomm Incorporated CR Rel-13 36.306 13.6.0 NB_IOT-Core 1485 F

⇒ **agreed**

R2-1707862 RoHC profile support for CIoT-only NB-IoT UE Qualcomm Incorporated CR Rel-14 36.306 14.3.0 NB_IOT-Core 1486 A

⇒ **agreed**

R2-1708311 Clarification that DL only bands are not supported in NB-IoT Huawei, HiSilicon CR Rel-13 36.331 13.6.0 NB_IOT-Core 2988 F

⇒ **agreed**

R2-1708312 Clarification that DL only bands are not supported in NB-IoT Huawei, HiSilicon CR Rel-14 36.331 14.3.0 NB_IOT-Core 2989 A

⇒ **agreed**

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R2-1709182 RAR reception for NB-IoT Nokia, Nokia Shanghai Bell CR Rel-13 36.321 13.6.0 NB_IOT-Core 1159 F

- Huawei think we discussed this in Rel-13 and we rejected it then. Furthermore it seems non-backwards compatible. The backwards incompatibility is in the assumption on eNB scheduling after RAR.
- Nokia wonders what are the consequences of not agreeing this. Will there be cases when the UE cannot successfully complete RACH. Huawei think RACH still works. QC think that there are cases when PDCCH and PDSCH cannot be sent within the window. LG also support the Nokia proposal.
- LG wonders if Huawei think this can work due to early scheduling in the RAR window.
- Huawei think PDSCH rx should start in the RAR window ..
- ZTE also think that the issue is a corner case.

After Offline:

- Nokia reports that there is significant support to fix this for rel-14 but there are concerns for Rel-13. ZTE has indicated that there might be R1 impact.

⇒ **There is a problem and we will fix it.**

⇒ **The Rel-13 CR is not pursued**

R2-1709183 RAR reception for NB-IoT Nokia, Nokia Shanghai Bell CR Rel-14 36.321 14.3.0 NB_IOT-Core 1160 A

- Huawei suggests that the cover page should be updated. The impact looks worse from the text than it really is.

⇒ **We do this only in Rel-14.**

⇒ **We also need a R1 CR. We send a short LS ASAP, and hopefully R1 can agree a CR (e.g. by email). Attach the agreed R2 CR.**

⇒ **Revised in R2-1709900 (rev 1)**

R2-1709900 RAR reception for NB-IoT Nokia, Nokia Shanghai Bell CR Rel-14 36.321 14.3.0 NB_IOT-Core 1160 1 F

⇒ **Agreed, but should be accompanied by a corresponding RAN1 CR.**

⇒ **After agreement it was found that the wrong WI code is used, but this CR has already been attached to an outgoing LS. Will ask secretary update the WI code for the plenary CR.**

R2-1709901 Draft LS on RAR reception for NB-IoT to R1 LSout Nokia, Nokia Shanghai Bell

⇒ **Remove the 2nd sentence.**

⇒ **Approved with change, final version in R2-1709902**

R2-1709345 Suspend and Resume procedure HTC Corporation CR Rel-13 36.304 13.6.0 NB_IOT-Core 0387 F

- Vodafone think the justification implies larger change.
- Huawei think that if the UE tries to resume and it doesn't work the eNB can fallback to establishment.
- QC think that NAS decides whether UE does establishment or resume.
- LG think that this is not needed.

⇒ **Not pursued**

R2-1709348 Suspend and Resume procedure HTC Corporation CR Rel-14 36.304 14.3.0 NB_IOT-Core 0388 A

⇒ **Not pursued**

7.4 Other LTE Rel-13 WIs

Including corrections related to the following WIs:

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(LTE_LAA-Core, leading WG: RAN1, REL-13; started: June 15, closed: Dec. 15, WID: RP-151045)

(LTE_CA_enh_b5C-Core, leading WG: RAN1, REL-13; started: Dec. 14, closed: Dec. 15, WID: RP-151984)

(LTE_SC_PTM-Core, leading WG: RAN2, REL-13; started: June 15, closed: Dec. 15, WID: RP-151110)

(LTE_eD2D_Prox-Core, leading WG: RAN2, REL-13; started: Dec. 14, closed: Mar. 16, WID: RP-150441)

(LTE_MC_load-Core, leading WG: RAN2, started: Mar. 15, closed: Dec. 15, WID: RP-152181)

(LTE_dualC_enh-Core, leading WG: RAN2, started: Mar. 15, closed: Dec. 15, WID: RP-151739)

(LTE_extDRX-Core; leading WG: RAN2; started: Mar. 15; closed: Mar. 16; WID: RP-150493)

(LTE_EBF_FDMIMO-Core; leading WG: RAN1; started: June. 15; closed: Dec. 15; WID: RP-151085)

(LTE_eMDT2-Core; leading WG: RAN2; started: Sep. 15; closed: Dec 15; WID: RP-151611)

(UTRA_LTE_iPos_enh-Core; leading WG: RAN2; started: Sep. 15; closed: Dec 15; WID: RP-152251)

(LTE_WLAN_radio-Core, leading WG: RAN2, started: Mar. 15, closed: Mar. 16, WID: RP-152213)

(LTE_WLAN_radio_legacy-Core; leading WG: RAN2; started: Sep. 15; closed: Mar 15; WID: RP-151615)

Including any LTE corrections related to the following joint UMTS/LTE WIs:

(ACDC-RAN-Core; leading WG: RAN2; REL-13; started: Mar. 15; closed: Dec. 15; RP-150662)

Including output from email discussion [98#42][LTE/Rel13] PUCCH-ConfigDedicated (Nokia)

R2-1707833 Clarification to PUCCH-ConfigDedicated Nokia, Nokia Shanghai Bell CR 36.331 13.6.1 2806 2 F Rel-13 LTE_CA_enh_b5C-Core

=> Impact analysis to be clarified.
=> To be merged with CR on NS value extension in R2-1708477 (Nokia, Offline discussion #06). Merged CR should have an appropriate title to cover both issues.
=> UE capabilities to be considered offline.
=> Revised R2=1709892

R2-1709892 Correction to PUCCH-ConfigDedication Nokia, Nokia Shanghai Bell CR Rel-13 36.331 13.6.1 LTE_CA_enh_b5C-Core 2806 3 F

- After further offline it was concluded that it was not needed to merge the CRs.
= >Agreed, but then revised:
[MCC]: Wrong tdoc number in the zip file (i.e., the tdoc and zip file have different numbers).
=> Agreed in R2-1709897.

R2-1707834 Clarification to PUCCH-ConfigDedicated Nokia, Nokia Shanghai Bell CR 36.331 14.3.0 2807 2 F Rel-14 LTE_CA_enh_b5C-Core

=> Revised in R2-1709893

R2-1709893 Correction to PUCCH-ConfigDedication Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.3.0 LTE_CA_enh_b5C-Core 2807 3 F

=> Agreed, but then revised:
[MCC]: Wrong tdoc number in the zip file (i.e., the tdoc and zip file have different numbers).
=> Agreed in R2-1709898.

R2-1707997 Correction on eCA with Dual Connectivity ROHDE & SCHWARZ discussion Rel-13 LTE_CA_enh_b5C-Core

- Nokia think the problem is in the field description only. Suggest a better wording can be found.
=> Offline discussion to find good clarification for the field description (R+S, Offline discussion #07)

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=> CRs in R2-1709701 36.331 R13 CR 3056, R2-1709702 36.331 R14 CR 3057

R2-1709701 Correction on eCA with Dual Connectivity ROHDE & SCHWARZ CR Rel-13 36.331 LTE_CA_enh_b5C-Core 3056 F

=> Agreed

R2-1709702 Correction on eCA with Dual Connectivity ROHDE & SCHWARZ CR Rel-14 36.331 LTE_CA_enh_b5C-Core 3057 A

=> Agreed

R2-1708372 Discussion on SFN mismatch issue NTT DOCOMO INC. discussion LTE_extDRX-Core

- LG wonders if the problem is severe. With this analysis the problem can occur once in a month. Think a long interruption would be acceptable for this kind of UE.
- Intel do not see this as a critical issue to address. Wonder what is the urgency to apply the new system information for this case.
- Nokia think there could be other use cases for this proposed flag. Also wonder if the UE can even receive paging when there is an SFN mismatch.
- DOCOMO think the interruption is not acceptable. A UE with eDRX of 5 minutes would not be able to receive paging for 3 hours.
- Huawei think it can be addressed by UE implementation.
- Softbank think the interruption would not be acceptable even if it is rare.
- MediaTek think the UE will often to a pre-wake up to resync with the network but we never cover this in the spec.

=> Offline discussion to try to conclude (DOCOMO, Offline discussion #08)

- Update from offline: There is common understanding that the mis-match can happen. Some UE vendors say the UE implementations will acquire MIB and in these cases the issue will not happen. Some companies also felt the issue would not happen in synchronised network, but can in unsynchronised network.
- Intel think the issue can also be addressed by network in an unsynchronised case
- Qualcomm think it is not a good idea to force the UE to reacquire.

=> RAN confirm that this problem can occur in some cases.

R2-1708526 Introduction of systemInfoModification-eDRX-SFN NTT DOCOMO INC. CR 36.331 14.3.0 3003 B Rel-14 LTE_extDRX-Core

R2-1708527 Introduction of systemInfoModification-eDRX-SFN NTT DOCOMO INC. CR 36.306 14.3.0 1495 B Rel-14 LTE_extDRX-Core

R2-1708760 Truncated eDRX cycle at H-SFN wrap around Nokia, Nokia Shanghai Bell, Softbank discussion Rel-13 LTE_extDRX-Core

- DCOMO confirm this is the correct understanding. Huawei also agree with the understanding and add that actually this case cannot happen in NB-IoT

=> RAN2 understanding is that PH calculation according to the formula from 36.304 other than using incremental of eDRX cycle value after the initial calculation, hence it is possible to have a truncated eDRX cycle or an extended eDRX cycle at H-SFN wrap around boundary when the eDRX cycle value is not divisible by 1024.

R2-1709039 Clarification on PUCCH SCell configuration Intel Corporation discussion LTE_CA_enh_b5C-Core

- Ericsson is not against this but would prefer to avoid eNB requirements. Suggest to discuss to find some good text.
- Qualcomm think more clarification of the observation 3 is needed. Wonders whether this implies autonomous remapping. Intel think autonomous remapping is only applies for one case of PUCCH SCell to SCell, but it is not described in the spec.
- Nokia think there should be no problems as we agreed the eNB should do a release and add.

=> Offline discussion to conclude (Intel, Offline discussion #09)

- Update from offline: Draft CR was provided but little feedback received. Intention seems to be agreeable.

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✉ **[99#03][LTE/CA] Clarification on PUCCH SCell configuration (Intel)**
Intended outcome: Agreed CR
Deadline: Thursday 2017-08-31
=> The CRs are agreed in R2-1709748, R2-1709749, R2-1709750, R2-1709751,

R2-1709040 Unnecessary mandatory IE in UE capability signaling Intel Corporation discussion LTE_CA_enh_b5C-Core

- Nokia think this should have been optional but all the content is optional and hence the signalling is not broken, but just inefficient. To fix this would be an optimisation which then would not be Rel-13.
- Samsung thought it was 3 bits per cell and hence ok. Intel clarify that it is 7 bits per carrier which could add up to be significant.
- Ericsson has some sympathy with the change but would like to discuss during the week.

=> Offline discussion to conclude (Intel, Offline discussion #10)

- Update from offline: Message size estimates were provided for discussion.

✉ **[99#19][LTE/] Unnecessary mandatory IE in UE capability signalling (Intel)**
Progress the issue to the next meeting
Intended outcome: Report and possible CR to the next meeting
Deadline: Thursday 2017-09-21

8 LTE Rel-14

8.1 WI: Enhanced LAA for LTE

(LTE_eLAA-Core; leading WG: RAN1; REL-14; started: Dec. 15; closed: Mar. 17; WID:RP-162229)

This agenda item is for correction CRs to the closed WI.

Documents in this agenda item will be handled in a break out session

R2-1708890 Correction on eLAA Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_eLAA-Core 1156 F
=> The CR is agreed

R2-1709347 Correction to eLAA configuration HTC Corporation CR Rel-14 36.331 14.3.0 LTE_eLAA-Core 3041 F
[CB]

8.2 WI: Support for V2V services based on LTE sidelink

(LTE_SL_V2V-Core; leading WG: RAN1; started: Dec. 15; closed: Sept 16; WID: RP-161603)

This agenda item is for correction CRs to the closed WI.

Documents in this agenda item will be handled in a break out session

R2-1709195 Clarification on systemInformationBlockType2Dedicated Intel Corporation CR Rel-14 36.331 14.3.0 LTE_feMTC-Core 3028 F
=> Not treated

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8.2.1 User plane

8.2.2 Control plane

R2-1707710 Correction on SPS assistance information in TS 36.331 OPPO CR Rel-14 36.331 14.3.0 LTE_SL_V2V-Core 2961 F

=> The CR is revised in R2-1709790

R2-1709790 Correction on SPS assistance information in TS 36.331 OPPO CR Decision 36.331 2961 1 F LTE_SL_V2V-Core Rel-14

=> The CR is agreed, but then revised:
[MCC]: Source to TSG is empty.
=> Agreed in R2-1709820.

8.3 Void

8.4 Void

8.5 WI: Enhanced LTE-WLAN Aggregation (eLWA)

(LTE_WLAN_aggr-Core; leading WG: RAN2; REL-14; started: Mar. 16; closed: Mar. 17; WID: RP-160923)

This agenda item is for correction CRs to the closed WI.

R2-1707658 Reply LS on on providing WT MAC address to the UE using eNB signalling (S3-171528; contact: Intel) SA3 LS in Rel-15 LTE_WLAN_aggr-Core

=> Noted

R2-1709046 Clarification on WLAN-SuspendConfig field description Intel Corporation CR 36.331 14.3.0 3019 F Rel-14 LTE_WLAN_aggr-Core

- Nokia wonder whether the previous wording was wrong. Intel thing this just aligned to the conventions used in the spec.

=> Can align with wording used elsewhere for similar cases.
=> Revised in R2-1709733 (Offline discussion #11)

R2-1709733 Clarification on WLAN-SuspendConfig field description Intel Corporation CR 36.331 14.3.0 3019 F Rel-14 LTE_WLAN_aggr-Core

=> Not pursued

8.6 WI: Further mobility enhancements in LTE

(LTE_eMob-Core; leading WG: RAN2; REL-14; started: Mar. 16; closed: Mar. 17; WID:RP-162503)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

R2-1708385 Discussion on TAT in RACH-less handover Huawei, HiSilicon discussion Rel-14 LTE_eMob-Core

=> Noted

R2-1708386 Correction on TAT in RACH-less handover in 36.321 Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_eMob-Core 1144 F

- Samsung think it in principle is fine.

=> Improve the wording
=> Revised in R2-1709735. Offline number is 200. **CB on Friday**

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R2-1708387 Correction on TAT in RACH-less handover in 36.331 Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_eMob-Core 2994 F

- Samsung would like to know the relation between this CR and the issue.
- Nokia think removing the action is not proper.

=> Find a better way rather than removing the action.

CBF: => Revised in R2-1709736 (offline 201)

R2-1708974 Correction of RACH-less handover Kyocera CR Rel-14 36.300 14.3.0 LTE_eMob-Core 1032 2 F

- Qualcomm think it is not necessary.
- Samsung support the clarification.
- Intel suggest offline discussion for better wording.

CBF: => Revised in R2-1709737 for better wording. (offline 202)

R2-1708388 Correction on SR trigger in RACH-less handover Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_eMob-Core 1145 F

=> Not pursued

R2-1709503 Discussion on SR trigger in RACH-less handover HUAWEI Technologies Japan K.K. discussion Rel-14 LTE_eMob-Core

- Intel thin the change is not needed.

R2-1709810 Clarification of the PTAG value for the RACH-less handover Samsung CR#3059 36.331 14.3.0 F LTE_eMob-Core

=> CR is agreed

8.7 WI: Further Indoor Positioning enhancements for UTRA and LTE

(UTRA_LTE_iPos_enh2-Core; leading WG: RAN2; REL-14; started: Mar. 16; closed: Dec. 16; WID: RP-162026)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

8.8 WI: L2 latency reduction techniques for LTE

(LTE_LATRED_L2-Core; leading WG: RAN2; REL-14; started: Mar. 16; closed: Sep. 16; WID: RP-160667)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

8.9 Void

8.10 WI: eMBMS enhancements for LTE

(MBMS_LTE_enh2-Core; leading WG: RAN1; REL-14; started: Mar. 16; target: Sep. 17; WID:RP-162231)

This agenda item is for correction CRs to the WI that is completed from RAN2 point of view.

Documents in this agenda item will be handled in a break out session

R2-1707866 Correction of MBMS-dedicated cell definition Qualcomm Incorporated CR Rel-14 36.300 14.3.0 MBMS_LTE_enh2-Core 1043 F

=> Withdrawn

R2-1709632 Correction of MBMS-dedicated cell definition Qualcomm Incorporated CR Rel-14 36.300 14.3.0 MBMS_LTE_enh2-Core 1057 F

=> Add the impact analysis

=> With the change above, the CR is agreed in R2-1709738.

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8.11 WI: Enhancements of NB-IoT

(NB_IOTenh-Core; leading WG: RAN1; REL-14; started: June 16; closed: Jun. 17; WID: RP-171060)

This agenda item is for correction CRs to the closed WI

Note: SC-PTM for eNB-IoT is handled under 8.12.1

Documents in this agenda item will be handled in a break out session

Incoming LS

R2-1707605 LS on Solution 9 (Option 2) for CN overload control for CP data (C1-172759; contact: Huawei) CT1 LS in Rel-14 CIoT_Ext-CT To:SA2, RAN3 Cc:RAN2

- There are papers in R2 on this.
- Huawei suggest to wait for R3 and SA2. Intel and Ericsson agree.
- Intel wonders if the proposed possible solution is to add establishment causes.
- LG think that R2 should be involved and think that there is a difference between release and reject.
- Chair think we should wait for R3 (and SA2).

⇒ **Noted**

R2-1707647 Reply LS on UE capabilities for MBMS (S2-175071; contact: Qualcomm) SA2 LS in Rel-14 LTE_feMTC-Core, NB_IOTenh-Core To:RAN1, RAN2, RAN3 Cc:CT3, CT4

- Qualcomm think that this do not require any further changes in RAN TSes.

⇒ **Noted**

R2-1709884 New configuration and UE capabilities for NB-IoT (R1-1715149; contact: Qualcomm)

- this is not backwards compatible in Rel-14.

⇒ **Noted**

Related proposals

R2-1709894 Introduction of interference randomization in NB-IoT

- Chair think that the main method for carrier selection in Rel-14 is a UE based method and think that a capability + dedicated configuration doesn't help much. Those Rel-14 features would not work in that case as they are not dependent on dedicated configurations. It anyway need to be mandatory for all Rel-14 UEs and Rel-13 UEs don't support this at all.
- Huawei think we should use British English and use s instead of z.
- Huawei wonders why we need a Capability for Connected mode as the feature is anyway not backwards compatible for Idle mode UEs.

R2-1709895 Introduction of interference randomization in NB-IoT

- CR needs change, and ASN.1 change is non-compatible ..

DISCUSSION
- Q1: Is a dedicated capability needed?

⇒ **RAN2 understands that the parts for non-anchor RACH and Paging in Idle mode would need to be mandatory and that Rel-14 specifications without this cannot be used.**

⇒ **RAN2 understands that a capability would determine the configuration the UE receives in RRC, i.e. configuration applicable only after this point in time.**

✉ **[99#16][NB-IoT] email discussion on Interference Randomisation in NB-IoT (Qualcomm)**
Objective to agree CRs (for upcoming RP), and determine whether a Capability is needed or not, based on R2-1709894, R2-1709895.

=> The CRs are agreed in R2-1709940 and R2-1709941.

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8.11.1 RRM Power Consumption

8.11.1 Treated together with AI 9.13.3 and 9.14.4

Neighbour cell measurements? Specified? Configured? UE detection of condition? Mobility state?

Including output from email discussion [98#52][NB-IoT] Power Consumption for RRM (Ericsson)

R2-1708230 Power saving for Cat-M UEs in weak signal conditions Sierra Wireless, S.A. discussion Rel-15

Above tdoc moved from 9.14.4

Proposal: RAN2 is asked to consider that the solutions for relaxed monitoring for static NB-IoT UEs in weak signal conditions should be considered for application to category M1 and M2 UEs

- Chair: there seems to be common proposals for MTC and NB-IoT.
- QC think that the applicability can be for LTE rather than cat M1 and M2.
- Ericsson think we can have some commonality but would like to apply for MTC but not in general for LTE. Huawei agrees this should not
- Nokia further think we need to define “static”.
- Intel think this could be for LTE. Blackberry support the proposal and think it could be for LTE

⇒ **The use case is M2M, we aim to have similar solutions for RRM measurement relaxation as far as reasonable for at least NB-IoT and LTE M2M UEs (FFS if this is Cat M1/M2).**

R2-1708277 [98#52][NB-IoT] Power Consumption for RRM Ericsson report Rel-14 NB_IOTenh-Core

Above tdoc moved from 9.13.3

Chair proposes to discuss proposal 2:

- Nokia support proposal 2 as it seems difficult to define “stationary”.
- Gemalto think this increases the scope a lot.
- Mediatek think that the case for mobile UEs only applies to such UE when they detect that they are stationary or almost stationary.
- Intel wonders if this the applies to all UEs
- Nokia think that the UE need to know whether it is allowed to use the relaxed monitoring.

⇒ **Introduce a relaxed monitoring solution that works for both UEs that are fixed and can be mobile.**

R2-1708273 Relaxed monitoring in NB-IoT Ericsson discussion Rel-14 NB_IOTenh-Core

Above tdoc moved from 9.13.3

P1:

- Gemalto are OK but wonders about positioning. Chair proposes not to discuss positioning.
- ZTE think we might need some background measurement.

P5:

- ZTE wonder if we need relaxed monitoring of serving cell. Chair think we address the serving cell power consumption under the enh system acquisition. Ericsson thin that if we address serving cell we need to do this in R4. Nokia agrees with this. ZTE still think that servin cell measurements are problematic.
- Nokia think that a mechanism based on serving cell measurements is not very reliable. Nokia wonders what exactly the proposal is. Ericsson clarifies that the UE detect change in serving cell RSRP. Mediatek think this can be a baseline. SW agrees. Gemalto agrees.
- Chair think there are three options. A) based on serving cell RSRP B) based on cell change count.

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- Ericsson think that just counting cells is too non-reliable. Huawei also think this is problematic as we don't count cells in PSM mode. Huawei think option B doesn't work well, as the only way to move is then to have cell selection. Nokia think the UE also doesn't do serving cell measurements in PSM mode ..
- Gemalto think that cell change count is preferable. ZTE also like to include this option.
- Blackberry think that with option A we might need R4 involvement and cell count seems more attractive. LG and Nokia also prefer cell count.
- Gemalto think we can do something quick for Rel-14 and have higher ambition level for Rel-15.

⇒ **Relaxed monitoring applies to neighbour cell measurements in Idle mode.**

⇒ **We specify how the UE detect when to do measurement relaxation**

Specify email discussion scope: Chair think we could aim to discuss the a) two mechanisms on the table (counting cells/detect cell change, RSRP measurement serving cell), and b) discuss in more detail how this is configured.

✉ **[99#41][NB-IoT/MTC] Email discussion on measurement relaxation (Ericsson)**
Objective to discuss the a) mechanisms to detect whether measurement relaxation applies or not, focusing on the mechanisms on the table (counting cells/detect cell change, RSRP measurement serving cell) including stage-3 details, and b) discuss in more detail how this is configured (per UE, per cell etc).

R2-1708278 Relaxed monitoring in MTC Ericsson discussion Rel-15 LTE_eMTC4-Core

Above tdoc moved from 9.14.4

R2-1708316 Relaxed monitoring Huawei, HiSilicon, Neul discussion Rel-15 NB_IOTenh-Core, NB_IOTenh2-Core

Above tdoc moved from 9.13.3

R2-1709338 Relaxed monitoring for cell reselection for Rel-15 MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

Above tdoc moved from 9.14.4

R2-1709193 Relax monitoring for cell reselection for eFeMTC and FeNB-IoT Intel Corporation discussion Rel-15 LTE_eMTC4-Core

Above tdoc moved from 9.14.4

R2-1708369 Consideration on relaxed monitoring for cell reselection in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

Above tdoc moved from 9.13.3

R2-1708376 Consideration on relaxed monitoring for cell reselection in eFeMTC ZTE Wistron Telecom AB discussion Rel-15 LTE_eMTC4-Core

Above tdoc moved from 9.14.4

R2-1707757 Measurement considerations for NB-IoT Gemalto N.V. discussion

Above tdoc moved from 8.11

R2-1708258 Solutions for reducing power consumption for measurements of neighbour cells in NB-IoT III discussion Rel-14 NB_IOTenh

R2-1709339 Delta scheme for relaxed monitoring in Rel-15 MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

Above tdoc moved from 9.14.4

R2-1708306 Introduction of relaxed monitoring for NB-IoT in 36.304 Huawei, HiSilicon CR Rel-14 36.304 14.3.0 NB_IOTenh-Core, TEI14 0384 C

R2-1708307 Introduction of relaxed monitoring for NB-IoT in 36.306 Huawei, HiSilicon CR Rel-14 36.306 14.3.0 NB_IOTenh-Core, TEI14 1492 C

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R2-1708308 Introduction of relaxed monitoring for NB-IoT in 36.331 Huawei, HiSilicon CR Rel-14 36.331 14.3.0 NB_IOTenh-Core, TEI14 2987 C

R2-1708274 Introduction of relaxed monitoring in NB-IoT Ericsson CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 2986 B

R2-1708275 Introduction of relaxed monitoring in NB-IoT Ericsson CR Rel-14 36.304 14.3.0 NB_IOTenh-Core 0383 B

R2-1708276 Introduction of relaxed monitoring in NB-IoT Ericsson CR Rel-14 36.306 14.3.0 NB_IOTenh-Core 1491 B

Above 3 tdocs moved from 9.13.3

8.11.2 Other

General

R2-1708247 RRC Connection Re-establishment for Control Plane CIoT EPS Optimization MediaTek Inc. CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 2985 F

Above tdoc moved from 8.11

- LG wonders if there are cases when security is started for a CP solution UE. Huawei think this can happen, the MME can decide to move a UE from CP solution to UP solution.
- Huawei disagrees with the coversheet but this the problem is there, and that the problem is the following: a) UE without security performs re-establishment, and SRB1 gets hanging in suspended state, b) if later security is to be started, it doesn't work as SRB1 is still suspended.
- QC wonder what happens in LTE for this. Ericsson think this is already fixed for LTE.

⇒ **Revised offline (offline disc 301), in R2-1709703 (rev 1) (Mediatek)**

R2-1709703 RRC Connection Re-establishment for Control Plane CIoT EPS Optimization MediaTek Inc. CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 2985 1 F

- LG think we may have a problem when SRB1 is resumed with zero security algorithms. Several companies don't see a problem.
- Change the level2 bullet to "except for a UE that only supports the Control Plane CIoT EPS optimisation"

⇒ **Revised in R2-1709903 (rev 2)**

R2-1709903 RRC Connection Re-establishment for Control Plane CIoT EPS Optimization MediaTek Inc. CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 2985 2 F

⇒ **Agreed unseen**

R2-1709224 Correction for connEstFailOffset Nokia CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 3036 F

- LG think this is not needed as the Field Description already covers this.
- Nokia think that the correction is needed as there are two interpretations among UE implementations.
- QC support the CR but the word description is misspelled on the cover page.

⇒ **Agreed**

Above tdoc moved from 8.11

R2-1707865 Correction on UE states for MBMS reception Qualcomm Incorporated CR Rel-14 36.300 14.3.0 NB_IOTenh-Core 1042 F

⇒ **Agreed**

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R2-1708314 Cleanup for NB-IoT Enhancements Huawei, HiSilicon CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 2990 F

- Intel wonders what “for RRC connection re-establishment for the Control Plane CIoT EPS optimisation” actually means? Does it means “using”, “using only”, “supporting”? E.g. if the UE is using both Data over NAS and security at the same time. QC think the exsiting text was clearer. Huawei would be ok to not have this change.

⇒ **We don’t do the change to “for RRC connection re-establishment for the Control Plane CIoT EPS optimisation” (and the related changes), keep the previous wording.**

⇒ **Revised in R2-1709704 (rev 1), can also check and update other details offline.**

R2-1709704 Cleanup for NB-IoT Enhancements Huawei, HiSilicon CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 2990 1 F

⇒ **Agreed**

R2-1708317 Miscellaneous corrections for NB-IoTenh and feMTC Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_feMTC-Core, NB_IOTenh-Core 1143 F

- LG suggest to also correct alignment of the bullet before the first change.
- LG support the CR.

⇒ **Agreed**

R2-1708842 Reconsideration of RA failure handling in NB-IoT LG Electronics Inc. discussion Rel-14 NB_IOTenh-Core

Proposal. When the RA procedure is failed before reaching maximum preamble retransmission, a UE in RRC_IDLE state should stay on the anchor carrier and a UE in RRC_CONNECTED state should stay on the configured carrier during the backoff time duration.

- Huawei think that acc to RRC, the UE during RACH is not supposed to receive paging or be scheduled, only measurements for cell reselection is continued. Huawei think that measurements could be stopped as well but don’t see a need for any other change.
- QC think that if the backoff time is long, normal IDLE / CONNECTED procedures should continue.
- Intel wonders if there is a problem also for LTE, and in this case would like more time to think.

After offline
- For Idle the Spec seems clear
- For RRC Connected case the MAC spec seems clear, but overall the UE behaviour is not crystal clear and suggest that we can discuss at the next meeting.

⇒ **Can discuss more next meeting**

R2-1708843 Reconsideration of RA failure handling in NB-IoT LG Electronics Inc. CR Rel-14 36.321 14.3.0 NB_IOTenh-Core 1152 F

⇒ **postponed**

R2-1709315 Support of extended wait time for CP data in RRC Connection Reject (NB-IOT) LG Electronics Inc. discussion Rel-14

⇒ **Not treated**

R2-1709316 Draft LS on Overload control for control plane data only (NB-IOT) LG Electronics Inc. discussion Rel-14

⇒ **Not treated**

R2-1709322 Support of extended wait time for CP data (NB-IOT) LG Electronics UK CR Rel-14 36.331 14.3.0 NB_IOTenh 3038 F

⇒ **postpone**

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R2-1709499 Corrections to RLC for re-establishment for NB-IoT using control plane Qualcomm Incorporated CR Rel-14 36.322 14.0.0 NB_IOTenh-Core 0130 F

⇒ **agreed**

R2-1709680 Backward compatibility of contention-free RA in NB-IoT Huawei, HiSilicon, Neul discussion Rel-14 NB_IOTenh-Core

Above tdoc Late

- QC agrees with the problem. QC wonders if we could just say that "if the UE can determine that the network is at least Rel-14, then use CFRA", i.e. a generalization of option 4.
- Ericsson think that it can be handled by the eNB only signalling preamble index 0, and think it is easier to just fix this in the network end. Any UE solution requires the UE to know whether the eNB is rel-13 or rel-14++, and would prefer an explicit signalled solution in that case. LG supports this.
- HW think that we cannot prevent Rel-13 eNB to use index <> 0. Docomo agrees and think we need a standardized solution and prefer the option 2.
- ZTE think that a UE can know that it is served by a Rel-14 network as we have introduced many new IEs. ZTE think that if we need to change something, the option 2 would be quite ok.
- Options: The Rel-14 UE adapts his behaviour (CFRA/CBRA) based on
  - Option 2: RNTI signalled in RAR
  - Option 4x: An explicit new?/existing? IE signalled at connection establishment or in system information.
- Huawei think that anyway the indication need to be explicit. If we go for option 4x it is preferred to change in dedicated signalling.
- Chair wonders what is the problem with option 2.
- QC think option 4x is cleaner. Blackberry agrees.

⇒ **There is a problem and it should be fixed without restricting the Rel-13 eNB behaviour.**

⇒ **Add a new IE in connection establishment/resume signalling (in "MSG4"), in MAC-MainConfig.**

R2-1709706 Correction to contention free random access Huawei, HiSilicon CR Rel-14 36.331 14.3.0 NB_IOTenh-Core 3064 F

- Docomo think we need to have a capability bit.
- Huawei think we can a) make it mandatory for Rel-14, b) link it to NPRACH on non-achor capability/iot bit c) a new capability.
- QC think we can go with a). Huawei agrees.
- QC think that the variable name need to be changed to follow RRC convention
- Docomo think we should have a notification on the 3GPP Website that earlier versions of Rel-14 should not be used. Chair think that this is also the case for the R1 interference randomization.

⇒ **This is a change of mandatory functions.**

⇒ **RAN2 notes that these CRs are not backwards compatible but they correct another non-backwards compatibility problem.**

⇒ **Revised in R2-1709905 (rev 1), agreed unseen**

R2-1709707 Correction to contention free random access Huawei, HiSilicon CR Rel-14 36.321 14.3.0 NB_IOTenh-Core 1181 F

⇒ **Use the MAC style of "if the UE is an NB-IoT UE .."**

⇒ **Revised in R2-1709906 (rev 1), agreed unseen**

R2-1709692 Discussion on Non-contention based RA procedure for NB-IoT NTT DOCOMO, INC. discussion Rel-14 NB_IOTenh-core

Above tdoc Late

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- Proposal is to have a rel-14 UE select the same “preamble” as a rel-13 UE in case the UE is in a rel-13 Network.

⇒ **a rel-14 UE selects the same “preamble” as a rel-13 UE in case the UE is in a rel-13 Network (based on the mechanism above)**

⇒ **include in CRs above.**

Positioning

R2-1708281 E-CID measurements in Idle mode Ericsson discussion Rel-14 NB_IOTenh-Core

- QC think that the UE shall measure Neighbour cells for positioning regardless of measurements for positioning. QC would just regard this to be assistance information rather than requirements.
- LG think that the UE does not need to measure neighbour cells when signal strength better than Sxsearch threshold but agrees that the UE can ignore the threshold for positioning.
- Huawei think this should be a R4 performance requirement, not a Stage-2 item.
- Blackberry think that the issue is the number of cells and frequencies, and the item may require more discussion.
- Gemalto agrees with the proposal.

⇒ **When NRSRP/NRSRQ measurements are requested the UE is required to measure NRSRP/NRSRQ on intra-frequency cells, and inter-frequency neighbour cells when interFreqCarrierFreqList is provided in SIB5-NB.**

R2-1708282 Clarification to positioning measurement in idle state Ericsson CR Rel-14
36.305 14.2.0 NB_IOTenh-Core 0070 F

⇒ **revised**

R2-1709728 Clarification to positioning measurement in idle state Ericsson CR Rel-14
36.305 14.2.0 NB_IOTenh-Core 0070 1 F

QC think “requested to measure” should be changed such that is understood that the UE is requested to provide measurements but leave open when those measurements were actually done. Ericsson agrees

⇒ **Change to: “For E-CID positioning method, when NRSRP/NRSRQ measurements are requested the UE is requested to provide NRSRP/NRSRQ measurements for intra-frequency neighbour cells and for inter-frequency neighbour cells. The UE may use inter-frequency information in system information of the serving cell specified in [14] to decide on which inter-frequency cells to measure”**

⇒ **Revised in R2-1709904 (rev 2), which is agreed unseen.**

8.12 WI: Further Enhanced MTC for LTE

(LTE_feMTC-Core; leading WG: RAN1; REL-14; started: June 16; closed: Jun. 17; WID: RP-170532)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

8.12.1 Multicast for feMTC and eNB-IoT

R2-1708313 Corrections for SC-PTM in NB-IoTenh and feMTC Huawei, HiSilicon CR Rel-14
36.300 14.3.0 NB_IOTenh-Core, LTE_feMTC-Core 1049 F

- Intel think that SC-MCCH should not be mentioned.
- QC wonders what is defined in MAC.

⇒ **Not pursued**

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8.12.2 Other

Positioning

Including output from email discussion [98#53][feMTC] PRS Occasion Group (ZTE)

R2-1708382 Summary of email discussion [98#53][feMTC] PRS Occasion Group AB report Rel-14 LTE_feMTC-Core ZTE Wistron Telecom

- QC think that P2 is wrong, both the first and the second part, e.g. bec this is not correct wrt LTE indoor positioning.
- ZTE think that restrictions that has been agreed by R1 for MTC should be specified somewhere. QC think that positioning services are available to UEs based on positioning capability, not “MTC” capability.
- Chair wonders if it is possible to understand what a valid/invalid configuration is. QC think that P2 doesn’t address invalid configurations but think this can be added later.

⇒ **P1 is agreed**

Offline discussion on further clarifications (311) (ZTE).

- ZTE reports that the offline agreement is to just keep the P1, and think that if RAN1 sees problems with the RAN2 configuration this can be addressed later,

R2-1708384 Correction on definition of PRS Occasion Group 14 36.355 14.2.0 LTE_feMTC-Core 0182 F ZTE Wistron Telecom AB CR Rel-

⇒ **revised**

R2-1709729 Correction on definition of PRS Occasion Group 14 36.355 14.2.0 LTE_feMTC-Core 0182 1 F ZTE Wistron Telecom AB CR Rel-

⇒ **agreed**, but then revised:
[MCC]: Source to TSG should be R2.

⇒ **Agreed in R2-1709760.**

R2-1709392 Minor corrections on TS 36.355 for Rel-14 MTC 36.355 14.2.0 LTE_feMTC-Core 0185 F Huawei, HiSilicon CR Rel-14

- Cover sheet is wrong, wrong TS

⇒ **Revised in R2-1709721 (rev 1)**

⇒ **Agreed unseen**

Other

R2-1709447 AS RAI FOR CAT-M WIRELESS,QUALCOMM discussion Rel-14 Gemalto N.V.,INTEL,SEQUANS,ERICSSON,SIERRA

- Proposal: Introduce AS RAI procedure for UE category M1 and M2 in REL-14.
- LG support this. Huawei also support this, but we might need time to check whether it can be applicable more widely. Ericsson would not like to expand beyond cat M1 and M2.
- Intel think that this can be applied for any Cat UE. LG think that this is for specific traffic characteristic. Intel think there are m2m devices also for Cat 1 etc. Blackberry support this
- Nokia wonders if this means that the procedure we have specified for NB-IoT is now more widely applicable. Gemalto clarifies that the same mechanism as for NB-IoT is intended. Nokia wonders if RRC is impacted. Is the use of this feature configured? Ericsson think this feature is configured by RRC. Nokia then wonders about a prohibit timer. Nokia think that without a prohibit timer this cannot be configured.
- SW think this is mostly applicable to cat M1 and M2.

⇒ **Introduce the AS RAI procedure for UE category M1 and M2 in REL-14.**

R2-1709864 Introduction of Release Assistance Indication 36.300 14.3.0 LTE_feMTC-Core 1058 B Gemalto N.V. CR Rel-14

- Chair think that CR category should be F. Huawei would accept cat C.

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- Nokia wonders what is a BL UE. Does it include a 5MHz? Gemalto think yes, and it refers to Cat M1 and M2.

⇒ **Cat C**

⇒ **Revised in R2-1709957, agreed unseen**, but then revised:
[MCC]: Wrong tdoc number in the cover sheet.

⇒ **Agreed in R2-1709989.**

R2-1709865 Introduction of Release Assistance Indication Gemalto N.V. CR Rel-14
36.306 14.3.0 LTE_feMTC-Core 1504 B

- QC think that for NB-IoT we say any category NB. Gemalto think that in other places for Cat Mx, Cat-M1 and Cat-M2 are spelled out.

⇒ **Cat C**

⇒ **Revised in R2-1709958, agreed unseen**, but then revised:

⇒ **[MCC]: Wrong tdoc number in the cover sheet.Agreed in R2-1709990.**

R2-1709866 Introduction of Release Assistance Indication Gemalto N.V. CR Rel-14
36.321 14.3.0 LTE_feMTC-Core 1182 B

- Nokia think that it is confusing that the cover page says Cat M1 Cat M2 but the text says BL.

⇒ **Cat C**

⇒ **revised in R2-1709959, agreed unseen**, but then revised:
[MCC]: Wrong tdoc number in the cover sheet.

⇒ **Agreed in R2-1709991.**

R2-1709867 Introduction of Release Assistance Indication Gemalto N.V. CR Rel-14
36.331 14.3.0 LTE_feMTC-Core 3065 B

- Huawei think we should not use xy but use the numbers instead “40” as the release is frozen,
- Ericsson think we can write “no” in the column FDD/TDD difference.

⇒ **Cat C + changes above**

⇒ **Revised in R2-1709960, agreed unseen**, but then revised:
[MCC]: Wrong tdoc number in the cover sheet.

⇒ **Agreed in R2-1709992.**

R2-1709180 Cat-M1 indication by Cat-M2 UE Nokia, Nokia Shanghai Bell CR Rel-14 36.306
14.3.0 LTE_feMTC-Core 1499 F

⇒ **agreed**

R2-1709181 Cat-M1 indication by Cat-M2 UE Nokia, Nokia Shanghai Bell CR Rel-14 36.331
14.3.0 LTE_feMTC-Core 3022 F

⇒ **agreed**

R2-1709184 Miscellanous ASN.1 corrections Nokia, Nokia Shanghai Bell CR Rel-14 36.331
14.3.0 LTE_feMTC-Core 3023 F

⇒ **agreed**

R2-1709313 Support of extended wait time for CP data in RRC Connection Reject (feMTC) LG Electronics Inc. discussion Rel-14

⇒ **not treated**

R2-1709314 Draft LS on Overload control for control plane data only (feMTC) LG Electronics Inc.
discussion Rel-14

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⇒ **not treated**

R2-1709325 Support of extended wait time for CP data (feMTC) LG Electronics UK CR Rel-14 36.331 14.3.0 LTE_feMTC 3039 F

⇒ **postpone**

R2-1709389 Corrections on Bandwidth preference indication for Rel-14 MTC Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_feMTC-Core 3047 F

- Ericsson agrees with the intention, but wonders if the name change causes problem. Chair think this is a RRC internal name.

⇒ **Agreed**

R2-1709390 Corrections on TS 36.331 for Rel-14 MTC Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_feMTC-Core 3048 F

- The change to mpdcch-PDSCH-MaxBandwidth-SC-MTCH is to correct a CR implementation issue
- QC wonders if the notation should be sub-frame or subframe.

⇒ **Revised in R2-1709727**

R2-1709727 Corrections on TS 36.331 for Rel-14 MTC Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_feMTC-Core 3048 1 F

⇒ **agreed**

R2-1709391 Corrections on TS 36.306 for Rel-14 MTC Huawei, HiSilicon CR Rel-14 36.306 14.3.0 LTE_feMTC-Core 1500 F

⇒ **Agreed**

R2-1708298 AS RAI for CAT - M discussion Gemalto N.V.,Sierra Wireless, Qualcomm, Sequans, Intel Rel-14

Above tdoc Withdrawn

8.13 WI: LTE-based V2X Services

(LTE_V2X-Core, leading WG: RAN1; REL-14; started: June 16; closed: Mar. 17; WID: RP-162519)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

R2-1707609 Response LS on resource reselection for P2X UEs (R1-1709334; contact: Nokia) RAN1 LS in Rel-14 LTE_V2X-Core To:RAN2

=> Noted

8.13.1 Stage 2

Not treated

R2-1707958 Miscellaneous correction to V2X in TS 36.300 Huawei, HiSilicon CR Rel-14 36.300 14.3.0 LTE_V2X-Core 1047 F

R2-1707959 Correction to V2X descriptions in TS 36.302 Huawei, HiSilicon CR Rel-14 36.302 14.3.0 LTE_V2X-Core 0113 F

R2-1708524 CR for the V2X sidelink communication in 36.300 ZTE Corporation CR Rel-14 36.300 14.3.0 LTE_V2X-Core 1050 F

R2-1708670 Stage-2 corrections for V2X Nokia, Nokia Shanghai Bell CR Rel-14 36.300 14.3.0 LTE_V2X-Core 1051 F

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R2-1708671 Discussion on applicable SL resource pools Nokia, Nokia Shanghai Bell discussion Rel-14 LTE_V2X-Core

R2-1709137 Correction on synchronization and CBR in 36.300 LG Electronics Inc. CR Rel-14 36.300 14.3.0 LTE_V2X-Core 1052 F

R2-1709252 Operating Bands for V2X Services via Uu Nokia, Nokia Shanghai Bell discussion Rel-14 LTE_V2X-Core

8.13.2 User plane

R2-1707960 Correction on congestion control for V2X sidelink communication in TS 36.321 (Opt1) Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1136 F

=> Not treated

R2-1707961 Correction on congestion control for V2X sidelink communication in TS 36.321 (Opt2) Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1137 F

=> Not treated

R2-1707962 Correction to P2X related procedures in TS 36.321 Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1138 F

=> Not treated

R2-1707963 Correction to P2X related procedures in TS 36.331 Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2976 F

=> Not treated

R2-1707964 Correction to UL and V2X SL prioritization in TS 36.321 Huawei, HiSilicon CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1139 F

=> Not treated

R2-1709138 Prioritization for V2X sidelink communication LG Electronics Inc. discussion Rel-14 LTE_V2X-Core

=> Not treated

R2-1709360 Corrections to UL-SL Prioritization Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1171 F

CB whether something needs to specified

Huawei thinks we can add a note: If the UE is not capable of simultaneous tx of SL discovery and V2X SL transmission it is up to UE implementation how to prioritize them.

=> The CR is postponed

R2-1708596 Random selection based resource reservation for V2P Nokia, Nokia Shanghai Bell CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1151 F

=> Not treated

R2-1708059 Correction on V2X in TS 36.321 CATT CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1142 F

=> Not treated

R2-1708448 Correction to SPS resource collision LG Electronics Inc. CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1146 F

=> Not treated

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R2-1708594 Multiple UL SPS configuration collision handling Nokia, Nokia Shanghai Bell CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1150 F

=> Not treated

R2-1709367 Handling collisions between multiple SPS configurations Ericsson discussion Rel-14 LTE_V2X-Core

=> Not treated

R2-1708517 Out of sequence reception of V2V data ZTE Corporation discussion LTE_V2X-Core

=> Not treated

Not treated

R2-1708519 CR on out of sequence reception in V2X ZTE Corporation CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1148 F

R2-1708522 CR for the V2X sidelink communication in 36.321 ZTE Corporation CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1149 F

R2-1709001 CR for resource selection for P-UE in TS 36.321 Samsung Electronics France SACR Rel-14 36.321 14.3.0 LTE_V2X-Core 1157 F

R2-1709357 Corrections to Multiple SPS Collisions Handling Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1168 F

R2-1709358 Correction to uplink time alignment Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1169 F

R2-1709359 Corrections to SL SPS Grant Reception Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1170 F

R2-1709361 Editorial Corrections to Resource Reselection Counter Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1172 F

R2-1709362 Handling Non-Overlapping Transmission Parameter Configuration Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1173 F

R2-1709374 SPS confirmation for sidelink Ericsson discussion Rel-14 LTE_V2X-Core

=> Noted

R2-1709363 Introduce Sidelink SPS confirmation Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1174 F

=> Not treated

R2-1709372 Packet Reordering for Sidelink Ericsson discussion Rel-14 LTE_V2X-Core

- ZTE acknowledges the problem, however, thinks that we should first start by restricting the transmission. Ericsson thinks that for V2X we have to take care of latency impacts. This also has impacts on latency reduction of reselections.
- Ericsson thinks is a basic functionality of V2X and very important for Rel-14
- Oppo, LG agrees with Ericsson
- ZTE wouldn't want to leave the value to T-reordering to UE implementation

=> Introduce sidelink RLC UM reordering for V2X sidelink communications. CRs are provided in [2][3].

=> As in legacy Uu, a UM window size = 16 is used for a 5-bit RLC SN field length.

=> The value of t-Reordering is set by the UE implementation

=> Noted

R2-1709364 Packet Reordering for Sidelink Ericsson CR Rel-14 36.322 14.0.0 LTE_V2X-Core 0127 F

=> inter-operability needs to be added

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=> category needs to be updated to C
=> The CR is revised in R2-1709780

R2-1709780 Packet Reordering for Sidelink Ericsson CR 36.322 0127 1
=> Update inter-operability section to include UE
=> The CR is agreed in R2-1709794 r2

R2-1709781 Packet Reordering for Sidelink Ericsson CR 36.331 3042 1
=> Add new row for Uni-directional UM RLC and window size set to 0 for “sidelink communication” and put spec version number
=> The CR is agreed in R2-1709795 with change above

R2-1709368 Handling Non-Overlapping Transmission Parameter Configuration Ericsson discussion Rel-14 LTE_V2X-Core
- Nokia asks if we can leave it up to UE implementation. Ericsson agrees but it would be better to randomize UE behaviour.
- Oppo thinks this is a corner case and we should stick to original agreement. Also the solution is not reasonable.
- Huawei thinks that it can be handled by eNB implementation.
- Oppo and CATT thinks that in this case the UE should not transmit. This is an incorrect implementation.

=> When there is no overlapping between the sets of speed-dependent and CBR-dependent configurations, it is up to UE implementation whether the UE transmits and which transmitting parameters the UE should select from the allowed values if it transmits something.
=> Noted

R2-1709518 Corrections to resource reselection for P2X Ericsson CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1179 F
=> Not treated

8.13.3 Control plane

R2-1707754 Discussion on Further Optimization for SIB21 Huawei, OPPO, HiSilicon discussion Rel-14 LTE_V2X-Core
- Samsung wonders how many ITS carrier we should support. According to the calculaitons at least 2 can be supported. Huawei explains that Europe has already allocated 3 ITS safety carriers.
- Huawei understands that to support two carriers we need to limit pool configuration to 1.
- CATT thinks that we should touch ASN.1 and fix it via implementations. Huawei indicates that with Option 1 this can be done in backward compatible way.
- LG agrees with Huawei and there are different ways to fix it.
- Nokia thinks that maybe we can fix this in the Rel-15 WI
- Ericsson points out that RAN4 is only specifying two carriers and the enhancements done last meetings are sufficient for now.

=> Further SIB21 size enhancements will not be pursued for Rel-14. How to handle this in Rel-15 eV2X can be discussed in eV2X.
=> Noted

R2-1709134 Extending SIB21 capacity LG Electronics Inc. discussion Rel-14 LTE_V2X-Core
=> Noted

R2-1707755 CR on Further Optimizations for SIB21 (Option 1) Huawei, OPPO, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2962 F
=> Not treated

R2-1707756 CR on Further Optimizations for SIB21 (Option 2) Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2963 F
=> Not treated

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R2-1707965 Miscellaneous correction to V2X in TS 36.331 Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2977 F

=> Change 2 should not remove interfreqlist and add “or SIB21”
- CATT thinks that there are some parameters missing for PSCCH. Oppo explains that there is no need and we should check the formula
=> Check the formula and whether PSCCH needs to be included

=> The CR is revised in R2-1709770

R2-1709770 Miscellaneous correction to V2X in TS 36.331 Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2977 F

=> The CR is agreed

R2-1707966 Discussion on NS-Value Configuration for V2X Sidelink Communication Huawei, HiSilicon discussion Rel-14 LTE_V2X-Core

- Oppo asks if this parameter can be linked with a geographical area. Ericsson agrees with Oppo and even for discovery these parameters are not provided from eNB.
=> RAN2 will include in the new values (NS33, 34) in the specification at least in the pre-configuration and SIB21. Details on how to signal it

Aftercomeback
- LG explains that the NS values are only needed for inter-frequency
- Ericson asks if we should just be more complete and not preclude how we signal it.
=> Noted

R2-1707967 Introduction of new NS values for V2X sidelink communication Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2978 B

- Nokia indicates that the first change is the other CRS
- Nokia asks whether for the second change we need a choice. Huawei explain that this is to cover the value 1. Ericsson explains that one possible way to do that is by stating that if the field is not present the default value is 1
=> Signalling needs to allow signalling value 1, 33, and 34
=> In addition to pre-configuration, the NS value is added in inter-frequency list, *SL-InterFreqInfoListV2X* IE
=> The CR is revised in R2-1709785

R2-1709785 Introduction of new NS values for V2X sidelink communication Huawei, HiSilicon CR Approval 36.331 2978 1

=> The CR is revised in R2-1709956

R2-1709956 Introduction of new NS values for V2X sidelink communication Huawei, HiSilicon CR Approval 36.331 2978 2 B LTE_V2X-Core Rel-14 14.3.0

[CB 108]

R2-1708060 Adding abstract syntax notation one description of sidelink pre-configuration CATT CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2980 F

=> Update the change to only: The RRC PDU contents in clause 6, 9.3.2, and clause 10
=> The change should be applicable from Rel-12.
=> CRs from Rel-12 will be prepared by CATT
=> Change category to A
=> change above and cat. A
=> The CR is revised in R2-1709775

R2-1709775 Adding abstract syntax notation one description of sidelink pre-configuration CATT CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2980 F

=> the CR is agreed
=> include the Rel-12/Rel-13 WI codes
=> add “clause” in front of 9.2.3
=> The CR is agreed in R2-1709805, but then revised:
[MCC]: Wrong revision number
=> Agreed in R2-1709821.

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R2-1709776 Adding abstract syntax notation one description of sidelink pre-configuration CATT CR 36.331 3060 F LTE_V2X-Core Rel-12 14.3.0

=> include the Rel-12/Rel-13 WI codes
=> add “clause” in front of 9.2.3
=> The CR is agreed in R2-1709806 with the changes above
[MCC]: Wrong revision number
=> Agreed in R2-1709822.

R2-1709777 Adding abstract syntax notation one description of sidelink pre-configuration CATT CR 36.331 3061 A LTE_V2X-Core Rel-13 14.3.0

=> include the Rel-12/Rel-13 WI codes
=> add “clause” in front of 9.2.3
=> The CR is agreed in R2-1709807 with the changes above
[MCC]: Wrong revision number
=> Agreed in R2-1709823.

R2-1708061 Miscellaneous corrections on V2X CATT CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2981 F

=> *v2x-BandwidthClass* only is added to the description.
=> *dataTxParameters*
=> Change - *SL-V2X-PreconfigCommPool* to *v2x-commtxpoollist* and *p2x-commtxpoollist*
=> the change on the correct clause is 14.2.1.3 is agreed
=> The changes above are agreeable and will be merged in R2-1709770

R2-1708684 Description of V2X-BandwidthClass IE Qualcomm Incorporated CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3011 F

=> Not treated

R2-1708377 CR on conditon for RRC connection establishment for V2X sidelink communication Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2993 F

- Nokia asks what the understanding of UE behaviour is:
  1. the UE goes to RRC connected to request the pool resources
  2. the UE goes to the indicated frequencies to acquire the resource pools in SIB21
- LG thinks that interpretation one is the correct one
- Oppo thinks that this is complicated as for discovery the network can indicate explicitly whether the UE should move to RRC connected
- Qualcomm thinks that both options should be possible as the network may not have cross carrier scheduling capability.
- Ericsson thinks that the discovery behaviour should be followed
- Huawei suggest to add “nor the concerned frequency is included in SIB21”

=> The CR will be combined with R2-1708685 and R2-1709136 and discussed together in R2-R2-1709771

R2-1709771 CR on conditon for RRC connection establishment for V2X sidelink communication Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2993 F

- Ericsson and Nokia don’t think that we should specify network behaviour. The eNB may not give the resources even in dedicated signalling. Huawei thinks that the eNB can handle the case by just de-configuring the frequency listed in SIB21.
- Qualcomm ask what happens if the UE doesn’t get the resources. Intel explains that there are many things the UE can do, but it is up to UE implementation.
- Samsung thinks that once the UE enters connected mode the eNB can either give the resource or decided to handover the UE to another frequency.

=> If the network provides only frequency in the SIB21, the UE should trigger a RRC connection establishment. RAN2 understanding, that the resources can be provided to the UE via dedicated signalling. No specification changes are needed.

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=> The CR will also capture change nr. 5 in 5.10.13.1 in R2-1708672 – companies will check the conditions are properly captured
=> Update inter-operability section
=> The CR is revised in R2-1709791

R2-1709791 CR on condition for RRC connection establishment for V2X sidelink communication Huawei, HiSilicon CR Approval 36.331 2993 2 F LTE_V2X-Core Rel-14 14.3.0

=> The CR is agreed

R2-1708672 Stage-3 corrections for V2X Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3009 F

- Intel thinks that SIB21 reading is already an implicit conditions
- Oppo is concerned that the section on SIB21 collides with the previous agreement that the UE doesn't have to read SIB21 if frequency only is provided.

=> First change is not needed

- ZTE explains that it is already clear that *mobilityControlInfoV2X* is for handover case. Huawei explains that this is already specified in field description

=> The second change is not needed

- LG thinks that the understanding is that if the UE is in dedicated it will measure only pools from dedicated signalling. Huawei and Samsung have similar view

=> The third change is not agreed
=> Fourth change already addressed in R2-1707965. Check that it addressed all points

- On change 5, Huawei thinks that this is enabling the case that the resources are provided via broadcast even for RRC connected UEs.
- Nokia confirms but notes that there is a new condition to be covered for the pre-configuration case.
- Intel thinks, Section 5.10.13 should be checked to see if changes are needed to cover the scenario in which the concerned frequency doesn't have a SIB21, for non-operator managed carrier, and the UE should use the pre-configuration.

=> The changes for 5.10.13 are not adopted. The else if condition will be checked and merged with R2-1709771 if deemed necessary.

- On last change, Huawei is concerned that it will impact backward compatibility. Nokia explains that it is not used anywhere.

=> The last change is agreed and will be merged in R2-1709770

R2-1708685 Correction on conditions for Transmission of V2X sidelink communication Qualcomm Incorporated CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3012 F

R2-1709136 Correction on condition for sidelink UE information in 36.331 LG Electronics Inc. CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3021 F

=> Not treated

R2-1708377 CR on conditon for RRC connection establishment for V2X sidelink communication Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2993 F

=> Not treated

R2-1708592 Multiple UL SPS configuration collision handling Nokia, Nokia Shanghai Bell discussion Rel-14 LTE_V2X-Core

- Ericsson agrees with Nokia that it would be beneficial for the system to know which resource the UE will be using, especially for blind decoding.
- LG thinks that if there is a collision the network can activate/deactivate the resources.
- Intel doesn't think this problem occurs often.
- Huawei further thinks that the eNB can handle it via eNB implementation and anyways dynamic scheduling can be used in extreme cases. CATT also thinks that this optimization is not necessary.
- Nokia thinks that reconfiguration is not optimal and this would save signalling overhead.

=> Noted

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R2-1708593 Multiple UL SPS configuration collision handling Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3005 F

R2-1708595 Random selection based resource reservation for V2P Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3006 F

R2-1709519 Corrections to resource reselection for P2X Ericsson CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3050 F

R2-1709002 CR for resource selection for P-UE in TS 36.331 Samsung Electronics France SACR Rel-14 36.331 14.3.0 LTE_V2X-Core 3015 F

Discussion
Two models of reservation
1) the RRC defines the new mode
2) the RRC just selects the pool and the MAC does the random selection with resource reservation
- LG thinks that the second model is better.
- Huawei thinks that we should avoid using terminologies such as reservations.
- Ericsson agrees with LG and we should use similar modelling as today
- LG emphasize that the only difference now is that we will use an existing behaviour for random selection so we should re-use terminology.

=> Second model will be adopted
=> Terminology to use should be based on existing terminology in MAC specs for resource reservation

R2-1708056 Discussion on Resource Reservation for Random Selection CATT discussion

=> Not treated

R2-1708057 Corrections to resource reservation for random selection in TS 36.321 CATT CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1141 F

=> Not treated

R2-1708058 Correction on transmission of P2X related V2X sidelink communication in TS 36.331 CATT CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2979 F

=> Not treated

R2-1708449 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR Rel-14 36.321 14.3.0 LTE_V2X-Core 1147 F

- Huawei would like to keep the abstraction in the MAC, where whether the pool is for P2X or V2X is not visible to the MAC.
- CATT thinks that P2X is known at the RRC and the sensing type is also known in the RRC.
- Ericsson thinks that instead of removing “based on sensing”, we should add the additional conditions, partial sensing, and random with resource reservation.

=> The CR is revised in R2-1709786

R2-1709786 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR 36.321 1147 1

- Ericsson we shouldn’t have it in a note.

=> Note is deleted
=> RAN2 assumes that the UE can chose to do one shot transmission (e.g. in case there is only one MAC PDU to transmit) even if both partial sensing and random selection are allowed.
=> Add a condition to differentiate the two cases in the MAC
=> Send LS to RAN1 with the RAN2 assumption and ask if they have any concerns.
=> The CR is revised in R2-1709796

R2-1709796 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR 36.321 1147 2

[CB 110]

R2-1708450 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR Rel-14 36.331 14.3.0 LTE_V2X-Core 2997 F

=> The CR is revised R2-1709787

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R2-1709787 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR 36.331 2997 1

- Nokia asks if we leave it up to UE implementation then this is not capturing RAN1 agreement.

=> The CR is revised in R2-1709797

R2-1709797 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR 36.331 2997 2

[CB 110]

R2-1709798 [Draft] LS to RAN1 on P2X LG Electronics Inc.

[CB 130]

R2-1708673 Correction to UE capabilities Nokia, Nokia Shanghai Bell CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3010 F

R2-1708674 Discussion on V2X pool configuration during handover discussion Nokia, Nokia Shanghai Bell Rel-14 LTE_V2X-Core

=> Withdrawn

R2-1709135 Multiple instances of SIB21 for extending SIB21 capacity LG Electronics Inc. CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3020 F

=> Not treated

R2-1709365 Packet Reordering for Sidelink Ericsson CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3042 F

R2-1709563 Correction on reserved bits Intel Mobile Communications CR Rel-14 36.331 14.3.0 LTE_V2X-Core 3053 F

8.14 WI: SRS switching between LTE component carriers

(LTE_SRS_switch; leading WG: RAN1; REL-14; started: Mar.16: closed: Dec. 16; WID: RP-160935)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

8.15 WI: Measurement Gap Enhancement for LTE

(LTE_meas_gap_enh-Core; leading WG: RAN4; REL-14; started: Mar. 16; closed: Jun. 17; WID: RP-160912)

This agenda item is for correction CRs to the closed WI

R2-1709522 Clarification on NCSG UE capability Intel Corporation, NTT DOCOMO CR 36.306 14.3.0 1501 F Rel-14 LTE_meas_gap_enh-Core

- Nokia ask why the UE does not support all the gaps. Intel think a UE that doesn't support async does not have to support pattern 2 and 3. Nokia think the network can only use 2 and 3 in the synchronised case.
- Ericsson suggest referring to the asynchronous parameter name.#

=> At least update the parameter name for asynchronous, and consider other wording updates.

=> Revised in R2-1709765 (Offline discussion #12)

R2-1709765 Clarification on NCSG UE capability Intel Corporation, NTT DOCOMO CR 36.306 14.3.0 1501 F Rel-14 LTE_meas_gap_enh-Core

= >Agreed, but then revised:
[MCC]: Wrong revision number
=> Agreed in R2-1709819.

R2-1709523 Clarification on NCSG UE capability Intel Corporation, NTT DOCOMO CR 36.331 14.3.0 3051 F Rel-14 LTE_meas_gap_enh-Core

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=> Align the code point names in the ASN.1 for the gap pattern IDs.
=> Revised on R2-1709766 (Offline discussion #12)

R2-1709766 Clarification on NCSG UE capability Intel Corporation, NTT DOCOMO CR 36.306 14.3.0 1501 F Rel-14 LTE_meas_gap_enh-Core
=> Agreed

R2-1709531 Signaling of UE Capability on NCSG Qualcomm Korea discussion 36.331 Rel-14 LTE_meas_gap_enh-Core
- Nokia would like to see the impact to ASN.1 before concluding.
- Intel think that a UE capability will be needed
=> Draft CRs to be provided in R2-1709767 36.331 CR 3058 and R2-1709768 CR (CR# to be obtained from Juha). Will take final decision on Friday when the ASN.1 impact can be seen. (Offline discussion #13)
- Update from offline: There was no consensus on the draft CRs.
- Intel think it should not be introduced in this release. Nokia have the same view. Huawei have the same view.
=> Not pursued

R2-1709767 Signaling of UE Capability on NCSG Qualcomm CR Rel-14 36.331 LTE_meas_gap_enh-Core 3058 F
R2-1709768 Signaling of UE Capability on NCSG Qualcomm CR Rel-14 36.321 LTE_meas_gap_enh-Core 1180 F

R2-1709581 Clarification on per CC measurement gap HTC Corporation CR 36.331 14.3.0 3054 F Rel-14 LTE_meas_gap_enh-Core
- Intel support the clarification.
- Nokia thinks some clarification is needed but this is quite limiting on the network. Nokia think if a CC is released then the existing gap configuration should be valid but if a CC is added then there could be a need to update the gap configuration.
=> Wording of the note to be progressed offline. (HTC, Offline discussion #14)
=> Revised in R2-1709769.

R2-1709769 Clarification on per CC measurement gap HTC Corporation CR 36.331 14.3.0 3054 F Rel-14 LTE_meas_gap_enh-Core
=> Agreed

8.16 Void

8.17 WI: Performance enhancements for high speed scenario in LTE

(LTE_high_speed-Core; leading WG: RAN4; REL-14; started: Dec. 15. 16; closed: Dec. 16; WID: RP-160172)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

8.18 WI: Voice and Video enhancement for LTE

(LTE_VoLTE_ViLTE_enh; leading WG: RAN2; REL-14; started: Sep. 16; closed: Mar. 17: WID: RP-161856)

This agenda item is for correction CRs to the closed WI.

Documents in this agenda item will be handled in a break out session

R2-1707606 Reply LS on RAN-Assisted Codec Adaptation (C3-173176; contact: Nokia) CT3 LS in Rel-14 LTE_VoLTE_ViLTE_enh-Core To:SA4 Cc:RAN2, SA2

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=> Noted

R2-1707660 Reply LS on RAN-Assisted Codec Adaptation (S4-170720; contact: Intel) SA4 LS in Rel-14 LTE_VoLTE_ViLTE_enh-Core To:CT3, RAN2 Cc:SA2

=> Noted
=> RAN2 will capture the recommendation from SA4 in 36.300 with RAN2 wording.

R2-1709209 RAN-recommended bit rate restriction Nokia, Nokia Shanghai Bell discussion Rel-14 LTE_VoLTE_ViLTE_enh-Core

- Ericsson thinks it should depend on eNB implementation.
=> Noted

R2-1709210 RAN-recommended bit rate restriction Nokia, Nokia Shanghai Bell CR Rel-14 36.300 14.3.0 LTE_VoLTE_ViLTE_enh-Core 1053 F

CBF:=> Revised in R2-1709739 (offline 203) and Draft reply LS in R2-1709740 to SA4, CT3 (Nokia)

R2-1709211 RAN-recommended bit rate restriction Nokia, Nokia Shanghai Bell CR Rel-14 36.321 14.3.0 LTE_VoLTE_ViLTE_enh-Core 1163 F

=> Not pursued

R2-1707644 Reply LS on Reply LS to RAN3 on support of redirection for VoLTE (S2-174069; contact: Nokia) SA2 LS in Rel-14 LTE_VoLTE_ViLTE_enh-Core To:RAN3 Cc:RAN2

=> Noted

R2-1708389 Corrections on eVoLTE Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_VoLTE_ViLTE_enh-Core 2995 F

=> Agreed

R2-1708641 Correction of field descriptions for recommendedBitRate and recommendedBitRateQuery Ericsson CR Rel-14 36.331 14.3.0 LTE_VoLTE_ViLTE_enh 3008 F

=> Add impact analysis
=> CR is agreed in R2-1709741.

R2-1709938 Remove the description of Inter RAT Redirection value for MMTEL Ericsson CR Rel-14 36.300 14.3.0 LTE_VoLTE_ViLTE_enh 1059 F

- This CR was endorsed by RAN3 and sent to RAN2 for agreement.
- Handled in post-meeting email approval
=> The CR is agreed in R2-1709938.

8.19 New UE category with single receiver based on Category 1 for LTE

(LTE_UE_cat_1Rx-Core; leading WG: RAN4; REL-14; started: Sep. 16; closed: Jun. 17: WID: RP-171149)

This agenda item is for correction CRs to the closed WI.

Documents in this agenda item will be handled in a break out session

R2-1708516 Additional OTDOA Capabilities Qualcomm IncorporatedCR 36.355 0183

=> The CR is revised in R2-179846

R2-1709846 Additional OTDOA Capabilities Qualcomm IncorporatedCR 36.355 0183 [CB]

8.20 Uplink Capacity Enhancements for LTE

LTE_UL_CAP_enh-Core; leading WG: RAN1; REL-14; started: Mar. 16; closed: Mar. 17: WID: RP-162488

This agenda item is for correction CRs to the closed WI.

Documents in this agenda item will be handled in a break out session

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R2-1708224 Correction on TTI bundling for TDD configurations 2 and 3 NEC CR Rel-14 36.331 14.3.0 LTE_UL_CAP_enh-Core 2983 F

=> The CR is agreed with the NW box unclicked in R2-1709772r1

R2-1708393 Correction on UE category combination in 36.306 Huawei, HiSilicon CR Rel-14 36.306 14.3.0 LTE_UL_CAP_enh-Core 1494 F

- Qualcomm is concerned that there may be a backward compatibility issue

=> Update cover sheet to indicate the backward compatibility issue

=> the CR is revised in R2-1709773

R2-1709773 Correction on UE category combination in 36.306 Huawei, HiSilicon CR Rel-14 36.306 14.3.0 LTE_UL_CAP_enh-Core 1494 F

[CB 101]

R2-1709537 Corrections to UL 256 QAM capability field descriptions Ericsson CR Rel-14 36.331 14.3.0 LTE_UL_CAP_enh-Core 3052 F

=> Update the CR to include the ASN.1 section, remove duplicated sections

=> The CR is agreed in R2-1709774with the changes above

8.21 WI: Enhancements on Full-Dimension (FD) MIMO for LTE

(LTE_eFD_MIMO-Core; leading WG: RAN1; REL-14; started: Mar. 2016; closed: Mar. 17: WID: RP-160623)

This agenda item is for correction CRs to the closed WI.

Documents in this agenda item will be handled in a break out session

8.22 Void

8.23 WI: Downlink Multiuser Superposition Transmission for LTE

(LTE_MUST-Core; leading WG: RAN1; REL-14; started: Mar. 16; closed: Dec. 16: WID: RP-161019)

This agenda item is for correction CRs to the closed WI

Documents in this agenda item will be handled in a break out session

8.24 Other LTE Rel-14 WIs

This agenda item may be used for documents relating to Rel-14 WIs with no allocated RAN2 time but which might have minor RAN2 impact.

Including any LTE corrections related to the following joint UMTS/LTE WI:

(eDECOR-UTRA_LTE-Core; leading WG: RAN3; REL-14; started: Dec. 16; closed: Mar. 17: WID: RP-162543)

8.25 LTE TEI14 enhancements

Small Technical Enhancements affecting LTE Rel-14 that do not belong to any Rel-14 WI.

Note: A TEI enhancement proposal should be treated for only one meeting cycle and involve only one WG. Otherwise, a WI should be proposed at RAN plenary!

This agenda item is for items already discussed under TEI14. New proposals should be submitted to TEI15 which is planned to be included on the agenda from RAN2#100.

Including output from email discussion [98#43][LTE/TEI14] Overheating problem (Huawei)

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R2-1708219 Report of email discussion [98#43][LTE/TEI14] UE overheating problem Huawei discussion Rel-14

Rec 1
- LG wonder of the temporary category and temporary supportBandCombination is enough to provide the information. Think the indication solution can solve the problem.
- Nokia can agree with recommendation but should not rule out an implicit indication that the UE is undergoing an overheating issue.

Rec 2
- Nokia do not support this recommendation and think it was not agreed in the email discussion. Nokia think the indication should be a recommendation on the network.
- LG have the same view as Nokia.
- Huawei agree that the signalling overhead is important but if we only feedback category information then eNB doesn't have all the info it needs to reconfigure the UE.
- Intel understand that the UE will follow the eNB reconfiguration. MediaTek also understand the signalling from UE is just a recommendation.
- Ericsson think the UE should provide a simple indication and a fine granularity is not needed. A reduced UE category should be enough. Sony support this comment and think it should be enough just to signal overheating.

Rec 4a
- DT think this use case is important to capture in the spec.

Rec 4g
- Qualcomm think the prohibit timer is difficult to configure as the cooling time is difficult to predict. Hence it should be left to UE implementation. DOCOMO think the timer should be sent by the network. DT think the prohibit timer is to avoid signalling and this should be set by the network. Also the UE should have some means to address overheating by implementation.

Rec 7
- LG understand that use of UE Assistance Information is used then it will be provided to the target eNB.

Agreements
1: Explicit indication of UE's overheating status is not supported. This indication is implicitly carried by UE's overheating report signalling.
2: Some reference to the overheating issue will be including in the CRs adding this feature.
3: UEAssistanceInformation is used to carry the request from the UE
4: UE's request is triggered by internal overheating caused by for example, the advanced CA, the higher order MIMO, the higher order modulation scheme being concurrently configured. This trigger will be described in the spec (FFS whether it is in stage 2 or stage 3 and detailed wording).
5: The prohibit timer in RRC is used to avoid UE's frequent requests.
6 RRCConnectionReconfiguration is used to indicate that the network can support the feature. If the network does not indicate support of the feature, the UE shall not send any request.
7 A 'reject' message from the network (in response to the request) is not supported.

R2-1708220 Low overhead signalling for UE overheating indication Huawei, HiSilicon discussion Rel-14

=> Revised in R2-1709696

R2-1709696 Low overhead signalling for UE overheating indication Huawei, HiSilicon discussion Rel-14

R2-1708978 UE overheating problem Qualcomm Korea discussion Rel-14 TEI14

R2-1709536 UE overheating indication Ericsson discussion Rel-14 TEI14

- Above 3 papers discussed together.
- Intel understand that the temporary capability would only be in the eNB and not be stored in MME. Huawei have same understanding as Intel and don't see a problem.
- DOCOMO ask if the UE has cooled down and would like to revert to higher capability. Huawei explain the UE will indicate to the network a new request.

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=> Offline discussion to conclude what is included in the request (Huawei, Offline discussion #15)
- Update from offline in R2-1709907

R2-1709907 Report of RAN2#99 offline discussion #15 on UE overheating problem Huawei
- Ericsson think it is not clear what the band combination refers to.
- Intel think the reduce band combination could be based on the current CA configuration.
- Samsung understand that the UE should be able to provide just a category.
- Nokia understand the band combination would be a subset of the already provided BCs and it is not needed as the network already has the knowledge.

Potential agreement to be discussed further offline:
1 The UE provides a temporary UE category in the request
2 The UE provides a request for the preferred maximum number of CCs

Agreements
1 The UE provides a reduced UE category in the request

✉ **[99#20][LTE/TEI14] Overheating (Huawei)**
Discuss the additional information provided in the request and progress CRs for next meeting.
Intended outcome: Report and CRs submitted to next meeting.
Deadline: Thursday 2017-09-21

R2-1708221 Introduction of the overheating indication Huawei, HiSilicon CR 36.300 14.3.0 1048 B Rel-14 TEI14
=> Revised in R2-1709693
R2-1709693 Introduction of the overheating indication Huawei Device, Huawei, HiSilicon, IPCom CR Rel-14 36.300 14.3.0 TEI14 1048 1 B

R2-1708222 Introduction of the UE capability for overheating indication Huawei, HiSilicon CR 36.306 14.3.0 1490 B Rel-14 TEI14
=> Revised in R2-1709694
R2-1709694 Introduction of the UE capability for overheating indication Huawei Device, Huawei, HiSilicon, IPCom CR Rel-14 36.306 14.3.0 TEI14 1490 1 B

R2-1708223 Introduction of the overheating indication Huawei, HiSilicon CR 36.331 14.3.0 2982 B Rel-14 TEI14
=> Revised in R2-1709697
R2-1709697 Introduction of the overheating indication Huawei Device, Huawei, HiSilicon CR Rel-14 36.331 14.3.0 TEI14 2982 1 B

R2-1708752 Prohibit timer for the overheating solution LG Electronics Mobile Research discussion TEI14
R2-1709212 Recap of intended UE assistance to diminish thermal issues Nokia, Nokia Shanghai Bell discussion Rel-14 TEI14
R2-1709544 UE assistance to diminish thermal issues Nokia, Nokia Shanghai Bell CR 36.300 14.3.0 1056 B Rel-14 TEI14

Including output from email discussion [98#44][LTE/TEI14] RLC-UM for LWA (Qualcomm)

R2-1709650 Support of RLC UM for LWA bearer Qualcomm Incorporated CR 36.300 14.3.0 1031 2 C Rel-14 LTE_WLAN_aggr-Core
Moved from 8.5 to 8.25
=> Agreed

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R2-1709651 UE Capabilty for support of RLC UM for LWA bearer Qualcomm IncorporatedCR 36.306 14.3.0 1502 C Rel-14 LTE_WLAN_aggr-Core

Moved from 8.5 to 8.25

=> Agreed

R2-1709653 Support of RLC UM for LWA bearer Qualcomm IncorporatedCR 36.323 14.3.0 0200 2 C Rel-14 LTE_WLAN_aggr-Core

Moved from 8.5 to 8.25

- LG think it is strange that for DL there is a procedure for LWA bearers but not for UL. Qualcomm think the confusion was already in the spec. We need to make it clear that LWA bearers are different from other DRBs.

=> Revised in R2-1709811 (Offline discussion #16)

R2-1709811 Support of RLC UM for LWA bearer Qualcomm IncorporatedCR Rel-14 36.323 14.3.0 LTE_WLAN_aggr-Core 0200 3 C

=> Agreed

R2-1709654 Introduction of RLC UM support for LWA Qualcomm IncorporatedCR 36.331 14.3.0 3055 C Rel-14 LTE_WLAN_aggr-Core

Moved from 8.5 to 8.25

- Nokia asks if it the ASN.1 change is correct.

=> New capability to be added in a separate extension group

=> Agreed in R2-1709812.

Other

R2-1707806 Cleaning up CQI and CSI-RS-related configurations (related to Rel-14 ASN.1 review issue N.099) Nokia, Nokia Shanghai Bell discussion Rel-14 TEI14

- Samsung think it makes sense to do this
- Ericsson agree it is good to do.
- Intel think there is a change to the ASN.1 encoding. Nokia explain that was not the intent and should be addressed

=> We will go ahead with this change.

R2-1707811 Restructuring of CQI-ReportConfig Nokia, Nokia Shanghai Bell CR 36.331 14.3.0 2968 D Rel-14 TEI14

=> Cat F

=> Revised in R2-1709813 (Offline discussion #17)

R2-1709813 Restructuring of CQI-ReportConfig Nokia, Nokia Shanghai Bell CR 36.331 14.3.0 2968 1 D Rel-14 TEI14

✉ **[99#21][LTE/TEI14] CQI-ReportConfig (Nokia)**
Intended outcome: CR submitted to next meeting
Deadline: Thursday 2017-09-21

R2-1708241 Corrections on the use of plmn-IdentityList in field descriptions Qualcomm IncorporatedCR 36.331 14.3.0 2984 F Rel-14 TEI14

- Nokia is concerned that this might cause more errors due to adding the without suffix and suffix R14

=> Revised in R2-1709814 (Offline discussion #18)

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R2-1709814 Corrections on the use of plmn-IdentityList in field descriptions Qualcomm Incorporated CR 36.331 14.3.0 2984 F Rel-14 TEI14

R2-1709952 Corrections on the use of plmn-IdentityList in field descriptions Qualcomm Incorporated CR 36.331 14.3.0 2984 F Rel-14 TEI14

=> Agreed

R2-1709285 Problems with GNSS Time Model Assistance Data Qualcomm Incorporated discussion Rel-14 TEI14

=> Noted

R2-1709288 Clarification to GNSS-TimeModelList Qualcomm Incorporated CR 36.355 14.2.0 0184 F Rel-14 TEI14

=> Agreed

R2-1709346 Clarification on LWIP aggregation HTC Corporation CR 36.331 14.3.0 3040 F Rel-14 TEI14

=> Agreed

R2-1709490 Corrections to references Ericsson CR 36.321 14.3.0 1178 F Rel-14 TEI14

=> Agreed

Proposed to be discussed under TEI15 from RAN2#100

R2-1708391 Introduction of Tx antenna selection per band in 36.331 Huawei, HiSilicon, Softbank CR 36.331 14.3.0 2996 B Rel-14 TEI14

R2-1708392 Introduction of Tx antenna selection per band in 36.306 Huawei, HiSilicon, Softbank CR 36.306 14.3.0 1493 B Rel-14 TEI14

R2-1708571 Introduction of Per supported band Tx Antenna Selection SoftBank, Huawei, HiSilicon, ZTE discussion Rel-14

R2-1709000 Solutions for UE camping in high speed railway scenario CMCC, MediaTek Inc. discussion Rel-14

R2-1709465 Overview on new LTE measurements Huawei, HiSilicon discussion TEI14

R2-1709467 Discussion on PRB usage distribution measurement Huawei, HiSilicon discussion TEI14

R2-1709468 Discussion on IP throughput distribution measurement Huawei, HiSilicon discussion TEI14

R2-1709470 Discussion on new measurements on number of active UEs Huawei, HiSilicon discussion TEI14

R2-1709472 Introduction of PRB usage distribution measurement Huawei, HiSilicon CR 36.314 14.0.0 0039 B Rel-14 TEI14

R2-1709475 Introduction of IP throughput distribution measurement Huawei, HiSilicon CR 36.314 14.0.0 0040 B Rel-14 TEI14

R2-1709476 Introduction of new measurements on number of active UEs Huawei, HiSilicon CR 36.314 14.0.0 0041 B Rel-14 TEI14

9 LTE Rel-15

9.1 SI: Further Enhancements to LTE Device to Device, UE to Network Relays for IoT and Wearables

(FS_feD2D_IoT_relay_wearable; leading WG: RAN2; REL-15; started: Mar. 16; target: Sept. 17; SID: RP-170295)

Time budget: 0TU

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Documents in this agenda item will be handled in a break out session

There is no time budget allocated to this SI at RAN2#99. This agenda item is for treating, and if necessary responding to, incoming LSs only.

R2-1707634 LS on RAN4 agreements for FeD2D SI (R4-1706074; contact: Intel) RAN4 LS in Rel-14 FS_feD2D_IoT_relay_wearable To:RAN1, RAN2

=> Noted

R2-1707642 LS (S2-172904/R2-1703945) on QoS support of UE-to-Network Relay over LTE sidelink RAN2 LSin

=> Noted

R2-1708218 DRAFT Reply LS on QoS support over PC5 Huawei, HiSilicon discussion Rel-15

- Ericsson wonders what avoid impact means. Huawei just likes to point out that we would try to solve with minimal impacts to SA2.

=> Noted

R2-1708515 [Draft] Response LS on QoS support of UE-to-Network relay over LTE sidelink ZTE Corporation LS out FS_feD2D_IoT_relay_wearable SA2

=> noted

R2-1708675 [DRAFT] Reply LS on QoS support over PC5 Nokia, Nokia Shanghai Bell discussion Rel-15 FS_feD2D_IoT_relay_wearable

=> The LS is combined with R2-1708218 and revised in R2-1709778

R2-1709778 [DRAFT] Reply LS on QoS support over PC5 Nokia, Nokia Shanghai Bell discussion Approval - - - - FS_feD2D_IoT_relay_wearable Rel-15

[CB 106]

R2-1708514 Discussion on QoS aspects for feD2D ZTE Corporation discussion FS_feD2D_IoT_relay_wearable

=> Noted

R2-1708513 Discussion on relay discovery of bandwidth limited remote UE ZTE Corporation discussion FS_feD2D_IoT_relay_wearable

RAN2 is recommended to send LS to RAN1 about AS is not aware which discovery model is used for the relay discovery and it is not necessary to design discovery model specific discovery enhancement for BL remote UE.

- Intel thinks that we should focus and respond to the main question and not open up the discussion to enhancements
- LG thinks that it can be possible but via interaction with upper layers.

=> Noted

R2-1709237 Consideration on Relay UE discovery for bandwidth limited Remote UEs LG Electronics Inc discussion Rel-15 FS_feD2D_IoT_relay_wearable

To enhance model specific discovery procedure, upper layer's additional operation and an interaction with radio layer and upper layer is necessary.

=> Noted

R2-1708676 [DRAFT] Reply LS on Relay UE discovery Nokia, Nokia Shanghai Bell discussion Rel-15 FS_feD2D_IoT_relay_wearable

=> We should add that the discover model is currently transparent to AS and discovery enhancements have not been studied. However, it is possible for the upper layers in the UE to indicate currently used discovery model when requesting AS layer to perform sidelink discovery transmission or sidelink discovery monitoring.

=> The LS is revised in R2-1709779

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R2-1709779 [DRAFT] Reply LS on Relay UE discovery Nokia, Nokia Shanghai Bell discussion Approval - - -

=> Therefore, it can be feasible for the upper layers in the UE to indicate currently used discovery model when requesting AS layer to perform sidelink discovery transmission or sidelink discovery monitoring. If the information is provided by upper layers, then it can also be made possible for RRC Connected UE to indicate the utilized discovery model to the eNB, if needed.

=> The LS is approved in R2-1709782

R2-1709302 Draft Reply LS to RAN1 on Relay UE discovery for bandwidth limited Remote UEs LG Electronics Inc LS out Rel-15 FS_feD2D_IoT_relay_wearable RAN1

=> Noted

R2-1709679 Reply LS on PC5 Secure Communication LS (S2-171621), LS (S2-170398, R2-168930)

=> Noted

9.2 WI: Shortened TTI and processing time for LTE

(LTE_STTIandPT-core; leading WG: RAN1; REL-15; started: June 16; target: Dec. 17; WID: RP-171468)

Time budget: 1 TU

Documents in this agenda item will be handled in a break out session

Including output from email discussion [98#46][LTE/sTTI] – Running 36.300 CR - Ericsson

Including output from email discussion [98#47][LTE/sTTI] – Running 36.321 CR - Ericsson

Including output from email discussion [98#48][LTE/sTTI] – Running 36.331 CR - Ericsson

R2-1707607 LS on UL HARQ processes and collision handling for short processing time with 1ms TTI (R1-1709243; contact: Sharp) RAN1 LS in Rel-15 LTE_sTTIandPT-Core To:RAN2

=> Noted

R2-1707696 Consideration on stopping instructing non-adaptive retransmission generation (R1 LS Agreement 1)SHARP Corporation discussion

R2-1707697 Consideration on stopping the autonomous non-adaptive retransmission (R1 LS Agreement 2) SHARP Corporation discussion

- Ericsson thinks this looks ok but just need some more time to check.

=> Noted

R2-1707698 Consideration on synchronous UL HARQ process for a UE configured with n+3 time SHARP Corporation discussion

- LG wonders if they HARQ processes can be dynamically switched. Qualcomm explains that the HARQ processes are not shared.

=> This will be captured in the running CR

=> Noted

Agreements:
- When a non-adaptive retransmission of a HARQ process collides with a transmission of another HARQ process scheduled using Short Processing Time at the time of transmission, HARQ entity delivers ACK to the HARQ process.

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R2-1708610 Running CR for introduction of shortened TTI and processing time for LTE draftCR Rel-15 36.300 14.3.0 LTE_sTTIandPT B — Ericsson
=> The running CR is endorsed

R2-1708611 Running CR for introduction of shortened TTI and processing time for LTE draftCR Rel-15 36.306 14.3.0 LTE_sTTIandPT B — Ericsson
=> Not treated

R2-1708612 Running CR for introduction of shortened TTI and processing time for LTE draftCR Rel-15 36.321 14.3.0 LTE_sTTIandPT B — Ericsson
=> The running CR is endorsed

R2-1708613 Running CR for introduction of shortened TTI and processing time for LTE draftCR Rel-15 36.331 14.3.0 LTE_sTTIandPT B — Ericsson
=> The running CR is endorsed

BSR/SR

R2-1708555 BSR Format in sTTI — Huawei, HiSilicon — discussion — Rel-15 — LTE_sTTIandPT-Core
Proposal 1: Implicitly mapping LCG and TTI length is preferred for BSR reporting for sTTI.
=> Noted

R2-1708609 Buffer Status Reporting with short TTI — Ericsson — discussion — Rel-15 — LTE_sTTIandPT
=> Noted

Agreements on BSR :
- No new BSR format is introduced for sTTI
- LCH to LCG grouping is left to eNB implementation
- Keep the existing BSR procedures, and formats, e.g., with buffer status reported per LCG and at most four LCGs.
- Keep the existing BSR cancellation procedure for sTTI.

R2-1708556 SR Configuration and Triggering for sTTI — Huawei, HiSilicon — discussion — Rel-15 — LTE_sTTIandPT-Core
Proposal 1: A mapping between SR configuration and TTI length need to be specified in LTE.
- Nokia thinks that we need to discuss mapping of SR configuration and logical channel
- Huawei thinks that it can be implicit.
- LG doesn't think that mapping between LCH and SR is not necessary
- Qualcomm thinks that the situation is different than NR.

=> Noted

R2-1708614 Scheduling Requests with short TTI — Ericsson — discussion — Rel-15 — LTE_sTTIandPT
Proposal 1 *When a UE has an SR pending, the UE sends SR using the next available SR resources including SR resources avaiable on both PUCCH and sPUCCH.*
Proposal 2 *It is left to UE implementation which of sPUCCH and PUCCH SR resources to send SR on when both are configured.*
Proposal 3 *Similar to SR on PUCCH, an SR transmitted on sPUCCH starts an ssr-ProhibitTimer to prohibit SRs on sPUCCH until it times out.*
- Nokia thinks that it should be a single timer and not per SR configuration. LG agrees with Nokia.
- Samsung thinks that we should have separate timer, especially in coverage situations.

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- LG is concerned that we need two separate SR procedures in parallel.
- Huawei, Qualcomm, InterDigital agree with proposal 3.
- Nokia thinks that we can have two timers configured and whether you have two timers running can be discussed.

Proposal 4 The existing SR_COUNTER can count both SR transmissions on PUCCH and sPUCCH. When reaching dsr-TransMax, the UE drops all sPUCCH and PUCCH resources and initiate Random Access (as in legacy).
- Qualcomm, Huawei, Samsung think that we should have two SR_COUNTERs. Nokia, Ericsson thinks that we should have a single one.

Proposal 5 Like in legacy LTE, inclusion of a BSR in a MAC PDU for transmission cancel all pending SRs, no specification change needed for this.
=> Noted

Discussion on what happens when the UE can transmit on both SR
Option 1: The UE uses sPUCCH
Option 2: The UE can transmit on both
Option 3: We leave it up to UE implementation
- LG asks why the UE can't transmit on both. Lenovo clarifies that the power has to be split so reliability is impacted.
- LG thinks that which one to chose should not be decided in RAN2.

Agreements:
- A restriction similar to LCP restriction can be used to determine SR configuration to logical channel mapping
- In the case of overlapping occasions of sPUCCH and PUCCH, it is left up to UE implementation which of sPUCCH or PUCCH SR resources to send SR on when SR can be sent on both PUCCH and sPUCCH. In case of non-overlapping SR occastions, the UE can transmit on the earliest SR occasion. The UE doesn't transmit on both sPUCCH and PUCCH simultaneously.
- **Working assumption**: an SR transmitted on sPUCCH starts an ssr-ProhibitTimer to prohibit SRs on sPUCCH until it times out
- **Working assumption:** Different SR_COUNTERs are used
- Like in legacy LTE, inclusion of a BSR in a MAC PDU for transmission cancel all pending SRs, no specification change needed for this.

R2-1709783 [DRAFT] LS on SPS and SR for sTTI Huawei, HiSilicon
- State our agreements on SR and SPS
- Indicate that RAN2 assumes that the UE cannot not transmit on both. RAN2 also does not see a benefit to transmit on both. Ask them to confirm
- indicate RAN2 desire to support SPS and agreements. Ask the feasibility of SPS activation/deactivation for sTTI

[CB105]

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Not treated

R2-1708615	Scheduling Requests with short TTI	Ericsson	draftCR	Rel-15	36.321 14.3.0 LTE_sTTIandPT B
R2-1708566	Draft LS on SR period for sTTI	Huawei, HiSilicon	LS out	Rel-15	LTE_sTTIandPT-Core RAN1
R2-1708761	SR for sTTI	Nokia, Nokia Shanghai Bell	discussion	Rel-15	LTE_sTTIandPT
R2-1709416	SR Cancellation for sTTI	Huawei, HiSilicon	discussion	Rel-15	LTE_sTTIandPT-Core
R2-1709645	SR and BSR for short TTI	Qualcomm Incorporated	discussion		

R2-1708553	Impacts of sTTI on L2 Timers	Huawei, HiSilicon	discussion	Rel-15	LTE_sTTIandPT-Core
R2-1708605	Impact of sTTI on L2 timers	Ericsson	discussion	Rel-15	LTE_sTTIandPT

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SPS

R2-1708607 SPS operation on sTTI Ericsson discussion Rel-15 LTE_sTTIandPT

- LG asks if multiple SPS can be activated at the same time. Ericsson thinks we would only have one active at a time and prioritize to sSPS.
- LG wonders if LCP restriction is applied to SPS. Qualcomm thinks the same restrictions should apply.
- Nokia asks if the activation has to be on sPDCCH and is it possible to avoid the impact to RAN1. Ericsson thinks that we should only send on PDCCH but the sDCI would have to be modified, fields have to be added. Lenovo asks if we are considering adding the same field as for normal PDCCH. Huawei thinks that RAN1 needs to decide how this is done, whether it is PDCCH or sPDCCH.

=> Noted

Agreements
=> RAN2 sees benefits to support SPS for short TTI
=> Same LCP restriction as dynamic grant will apply for SPS grant.
=> sTTI SPS intervals are configured by RRC. New sTTI-based interval values are introduced. The minimum value of 1 sTTI is supported. Other values are FFS.
=> In DL/UL SPS with asynchronous HARQ, the HARQ process ID is derived from the sTTI-number (index of sTTI within subframe). Details are FFS
=> Send LS to RAN1 to indicate RAN2 desire to support SPS and agreements. Ask the feasibility of SPS activation/deactivation for sTTI

Not treated

R2-1709657 SPS short TTI Qualcomm Incorporated discussion

R2-1708608 DRAFT LS on SPS operation on sTTI Ericsson discussion Rel-15 LTE_sTTIandPT

R2-1709155 SPS with sTTI LG Electronics Inc. discussion LTE_sTTIandPT

R2-1708568 Support of SPS for sTTI in TS 36.321 Huawei, HiSilicon, Ericsson draftCR Rel-15 36.321 14.3.0 LTE_sTTIandPT-Core B

=> withdrawn

R2-1708569 Support of SPS for sTTI in TS 36.331 Huawei, HiSilicon, Ericsson draftCR Rel-15 36.331 14.3.0 LTE_sTTIandPT-Core B

=> withdrawn

R2-1709414 Support of SPS for sTTI in TS 36.321 Huawei, HiSilicon, Ericsson CR Rel-15 36.321 14.3.0 LTE_sTTIandPT-Core 1177 B

=> Moved to email discussion

R2-1709415 Support of SPS for sTTI in TS 36.331 Huawei, HiSilicon, Ericsson CR Rel-15 36.331 14.3.0 LTE_sTTIandPT-Core 3049 B

=> Moved to email discussion

✉ **[99#34][LTE/sTTI] – SPS for sTTI**
- review and provide comments on running CR for SPS
- before next meeting

DRX

R2-1709647 Remaining issues on C-DRX for short TTI Qualcomm Incorporated discussion

Proposal 1: RAN2 to agree using a MAC CE command to limit sPDCCH monitoring during DRX ON time.

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Proposal 2: If L2 signaling is not adopted, RAN2 should agree to RRC signaling for different DRX ON duration timers and/or a set of sPDCCH locations within a TTI.

Proposal 3: RAN2 should send an LS to RAN1 on DRX retransmission timer agreements and its impact on HARQ process sharing.

=> Noted

R2-1708603 DRX impacts of sTTI Ericsson discussion Rel-15 LTE_sTTIandPT

=> Noted

Discussion
- Nokia thinks that MAC CE should be considered, the UE should be monitoring PDCCH to receive it anyways.
- Ericsson and QC would like to enhance DRX monitoring during onduration (e.g. turn off some sPDCCH monitoring)
- LG doesn't think we need to optimize as it limits scheduling opportunity. QC thinks that the eNB is in full control and it can configure the UE as it wishes. LG understands that sTTI is for latency and DRX contradicts. Qualcom explains that this is for the case where you have DRX configured and we shouldn't force the UE to monitor all sPDCCH.

=> No DRX enhancements are supported for Rel-15
=> a single onDuration timer is configured
=> Respond to RAN1. No consensus in RAN2 to support L2/L3 DRX enhancement. Mention agreements HARQ RTT timer and retransmission timers

R2-1709784 [draft] Reply LS to RAN1 on DRX Ericsson
[CB 118]

R2-1708762 DRX for sTTI Nokia, Nokia Shanghai Bell discussion Rel-15 LTE_sTTIandPT

=> Not treated

R2-1708567 DRX Timers for sTTI in TS 36.331 Huawei, HiSilicon CR Rel-15 36.331 14.3.0 LTE_sTTIandPT-Core 3004 B

=> Not treated

R2-1708565 Down-selection of DRX mechanism in sTTI Huawei, HiSilicon discussion Rel-15 LTE_sTTIandPT-Core

=> Not treated

R2-1708759 sPDCCH monitoring for sTTI LG Electronics Mobile Research discussion LTE_sTTIandPT-Core

=> Not treated

R2-1708617 Logical Channel Prioritization procedure with short TTI Ericsson discussion Rel-15 LTE_sTTIandPT

=> The current specification for Bj operation doesn't need to be updated.
=> Noted

R2-1708751 LCP for sTTI LG Electronics Mobile Research discussion LTE_sTTIandPT-Core

Proposal 3. The UE shall not include data from logical channels that are not allowed to be included in a MAC PDU even when there is remaining space in a MAC PDU after including data from all logical channels that are allowed to be included in a MAC PDU

- Nokia understands that this is already in the specification

=> There is no TTI length restriction for MAC CE
=> Noted

R2-1709646 MAC CE Handling under PUSCH and sPUSCH Collision Qualcomm Incorporated discussion

- Ericsson thinks that if you cancel PUSCH with a MAC CE, the BSR would still be consider pending and should be reported on sPUSCH. LG thinks this can be handled with retransmission.

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- Lenovo thinks that this can be left to UE implementation

=> Nothing needs to be specified and it is up to the UE implementation whether to send MAC CE/BSR on sPUSCH when the original MAC CE in PUSCH is dropped.

=> Noted

TTI switching

R2-1708554 TTI Switching between sTTI and legacy TTI Huawei, HiSilicon discussion Rel-15 LTE_sTTIandPT-Core

R2-1708604 HARQ process handling with different TTIs lengths Ericsson discussion Rel-15 LTE_sTTIandPT

R2-1709156 HARQ aspect of sTTI operation LG Electronics Inc. discussion LTE_sTTIandPT

R2-1709157 Support of switching between different TTI length within one HARQ procedure LG Electronics Inc. discussion LTE_sTTIandPT

R2-1708559 SPT Impact on RAR Reception timing Huawei, HiSilicon discussion Rel-15 LTE_sTTIandPT-Core

- Ericsson indicates that this is outside the scope of WI

=> No support for shortened processing time for RAR

=> Noted

R2-1708560 Draft LS on SPT impact on RAR reception timing Huawei, HiSilicon LS out Rel-15 LTE_sTTIandPT-Core RAN1

R2-1708561 SPT impact on TA command reception timing Huawei, HiSilicon discussion Rel-15 LTE_sTTIandPT-Core

R2-1708562 Draft LS on SPT impact on TA command receiving Huawei, HiSilicon LS out Rel-15 LTE_sTTIandPT-Core RAN1

R2-1708557 The impact on CQI transmission in DRX of SPT and sTTI Huawei, HiSilicon discussion Rel-15 LTE_sTTIandPT-Core

- Nokia doesn't think we need to do anything. Ericsson agrees. Huawei thinks this has impact on the latency.

=> Noted

R2-1708558 Draft LS on CQI transmission in DRX of SPT and sTTI Huawei, HiSilicon LS out Rel-15 LTE_sTTIandPT-Core RAN1

R2-1708563 UE capability to handle transmission of both sTTI and legacy TTI Huawei, HiSilicon discussion Rel-15 LTE_sTTIandPT-Core

R2-1708564 Draft LS on UE capability to handle transmission of both sTTI and legacy TTI Huawei, HiSilicon LS out Rel-15 LTE_sTTIandPT-Core RAN1

R2-1708606 List of outstanding issues for short TTI Ericsson discussion Rel-15 LTE_sTTIandPT

R2-1708616 sPUCCH Utilization Strategy Ericsson discussion Rel-15 LTE_sTTIandPT

9.3 Study on UL data compression in LTE

(FS_LTE_UDC; leading WG: RAN2; REL-15; started: Dec. 16; target: Sep. 17: SID: RP-170403)

Time budget: 1 TU

Documents in this agenda item will be handled in a break out session

R2-1708357 Clean Up of the TR 36.754 CATT CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0001 F

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=> Agreed

Deflate:

R2-1708358 More Details and Simulation Results of Deflate with 1 Byte UDC Header CATT discussion Rel-15 FS_LTE_UDC

- LG concern the failure case.
- Intel think checksum is needed and the retransmission can be discussed in WI phase.

=> Noted

R2-1708359 Update of Description and Evaluation Results for Deflate CATT CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0002 F

=> Only capture Simulation results with RFC 1951 (with 1 byte UDC header) for both cases.
=> Indicate the results without cross check.

CBF: => Revised in R2-1709742 (offline number 222)

R2-1708363 Correction on Computation Complexity Table for Deflate CATT CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0004 F

=> Not pursued

APDC:

R2-1708383 Compression Gain evaluation of APDC solution Ericsson discussion Rel-15

=> Noted

R2-1708572 Further analysis on APDC solution SoftBank Corp. discussion Rel-15

=> Noted

R2-1708296 Evaluation and crosscheck on APDC algorithm MediaTek Inc., Broadcom discussion Rel-15 FS_LTE_UDC

=> Noted

R2-1709041 Evaluation on APDC Intel Corporation discussion FS_LTE_UDC

=> Noted

R2-1708360 Cross Check on APDC CATT discussion Rel-15 FS_LTE_UDC

=> Noted

R2-1709669 Response to R2-1708296 for comments on APDC Qualcomm Inc. discussion

=> Noted

- Intel would like to know the reason for the different results.

=> Capture the simulation results from R2-1708296, R2-1708383, R2-1708572, R2-1709041 and R2-1708360 in TR36.754.

[99#14][LTE/UDC] (CATT)

Intended outcome: Agreed CR of 36.754 on capturing the simulation results of APDC
Deadline:2017-08-30

- Capture the simulation results from R2-1708296, R2-1708383, R2-1708572, R2-1709041 and R2-1708360 for the buffer size of 8K and 16K.
- Remove in TR 36.754 the statement “The same results are obtained for setups with 8Kbyte and 32Kbyte compression buffer size” in Section 7.2.4.2 and the statement “No compression efficiency variation due to buffer size was observed in UDC solution 4” in Section 7.3, and indicate instead that “APDC compression effiency varies as a function of the compression buffer size”.
- Clarify the buffer size issue of APDC.
- Update conclusion session based on the results.

=> The resulting CR is agreed in R2-1709921.

The following papers are not treated:

R2-1709065 APDC source code reference Qualcomm Korea CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0005 F

R2-1708361 Clarification on Buffer Size for APDC CATT CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0003 F

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R2-1709024 Implementation of APDC compressor source code Qualcomm Korea other Rel-15 36.754 FS_LTE_UDC

R2-1709411 Corrections of APDC MediaTek Inc. CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0006 F

Complexity comparison:

R2-1708362 Complexity Evaluation between APDC and DEFLATE CATT, MediaTek discussion Rel-15 FS_LTE_UDC

=> Not treated

R2-1709582 Complexity Evaluation between APDC and DEFLATE CATT, MediaTek, Intel discussion Rel-15 FS_LTE_UDC

=> Not treated

R2-1709555 A Quanitative Evaluation on APDC Processing Complexity based on open source code Qualcomm Korea discussion Rel-15 36.754 FS_LTE_UDC Revised to R2-1709842

=> Not treated

R2-1709842 A Quanitative Evaluation on APDC Processing Complexity based on open source code Qualcomm Korea discussion Rel-15 36.754 FS_LTE_UDC

=> Not treated

R2-1708979 Comparison Study on Deflate and APDC Qualcomm Korea discussion Rel-15 36.754 FS_LTE_UDC

- CATT thin static Huffman encoding can reduce the complexity.

=> Noted

R2-1709832 Way forward on LTE UDC AsusTek, Broadcom, CATT, CATR, CHTTL, CoolPad, HTC, Huawei, HiSilicon, Intel, ITRI, MediaTek, OPPO, Samsung, Spreadtrum, vivo discussion Rel-15 36.754 FS_LTE_UDC

9.4 Study on Enhanced Support for Aerial Vehicles

(FS_LTE_Aerial; leading WG: RAN2; REL-15; started: Mar. 17; target: Dec. 17: SID: RP-171050)

Time budget: 1.5 TU

Documents in this agenda item will be handled in a break out session

9.4.1 General

(work plan and TR skeleton)

R2-1707616 LS on RAN1 agreements on key performance indicator, evaluation assumptions, and channel modelling (R1-1709862; contact: Ericsson)RAN1 LS in Rel-15 FS_LTE_Aerial To:RAN2

=> Noted

R2-1707617 LS on RAN1 agreements on channel modelling (R1-1709869; contact: Ericsson) RAN1 LS in Rel-15 FS_LTE_Aerial To:RAN2

=> Noted

=> Take RAN1 channel modelling agreements in R2-1707617 into consideration in future RAN2 evaluations

R2-1709395 RAN1 working progress on Study on Enhanced support for Aerial Vehicles NTT DOCOMO INC., Ericsson discussion FS_LTE_Aerial

=> Noted

R2-1708236 Outcome of email discussion [98#49] Qualcomm Incorporated (Email discussion rapporteur) discussion Rel-15 FS_LTE_Aerial

=> Noted

R2-1709394 Draft TR 36.777 v011 NTT DOCOMO INC. draft TR Rel-15 36.777 0.1.0 FS_LTE_Aerial

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=> Table 5.2-1 Performance metrics for HO and RLF simulations should be changed according to the email discussion report (R2-1708236)
=> With this change TR is agreed in R2-1709743

9.4.2 Requirements and parameter identification

(Identify the heights, speeds, latency, reliability, data rate, positioning accuracy, etc , taking into account the regulation viewpoints)

R2-1708661 On the requirements of connectivity services for drones Ericsson discussion Rel-15 FS_LTE_Aerial

Agreement:
1: RAN2 understanding is that C&C: 50ms (one way from eNB to UAV).
2: Use the definition "user plane latency means "the duration from the input to PDCP in the transmitter" to "the output from PDCP in the receiver." The wording can be improved in the LS to RAN1.

CBF: => Draft LS to RAN1 in R2-1709747 to inform our understanding on latency (offline number 0824) (DOCOMO)

R2-1708540 Considerations on traffic for Drones Huawei, HiSilicon discussion Rel-15 FS_LTE_Aerial
- Intel, Xiaomi and Lenovo think it depends on eNB implementation and already supported today.
- Qualcomm and Nokia think we should focus on the traffic type.

=> Noted

9.4.3 Potential enhancements for UAV interference problem

(Solutions to detect whether UL signal from an air-borne UE increases interference in multiple neighbour cells and whether an air-borne UE incurs interference from multiple cells)

R2-1708665 Interference Detection for Aerial Vehicles Nokia, Nokia Shanghai Bell discussion Rel-15 FS_LTE_Aerial

=> Noted

R2-1708541 Interference Detection for Drones Huawei, HiSilicon discussion Rel-15 FS_LTE_Aerial

=> Noted

R2-1708973 Consideration for interference detection and measurement enhancement for drone UE Lenovo, Motorola Mobility discussion Rel-15 FS_LTE_Aerial

=> Noted

R2-1709038 UL interference from an aerial vehicle Intel Corporation discussion FS_LTE_Aerial

=> Noted

R2-1708662 Potential enhancements for UAV interference problem Ericsson discussion Rel-15 FS_LTE_Aerial

=> Noted

R2-1708734 Detection of UAV interference InterDigital discussion Rel-15 FS_LTE_Aerial

R2-1709396 Measurements Reporting Enhancements for UAV UE NTT DOCOMO INC. discussion FS_LTE_Aerial

Agreed observations:

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1 The RSRP and RSSI characteristics of aerial vehicles in the air are different from terrestrial vehicles.
2 The downlink interference could be detected by RSRP/CSI-RSRP/RSRQ/RS-SINR/CSI reporting from UE to eNB.
3 RSRP, CSI-RSRP, RSRQ, power headroom, maximum output power and used PRBs can be used to estimate the uplink interference caused by a UAV for some scenarios.

✉ **[99#37][LTE/UAV] DL and UL Interference detection (NTT DOCOMO)**

- Discuss other observations from the contributions in 9.4.3 and capture the agreed observations
- Based on the agreed observations, solutions can be discussed
  Intended outcome: Report to next meeting
  Deadline: 2017-09-28

9.4.4 Potential enhancements for handover

(Identify if enhancements in terms of cell selection and handover efficiency as well as robustness in handover signalling can be achieved)

The following papers are not treated:

R2-1708663 Mobility simulations Ericsson discussion Rel-15 FS_LTE_Aerial
R2-1708544 Analysis and Simulation of Handover Issues for Drones Huawei, HiSilicon discussion Rel-15 FS_LTE_Aerial
R2-1708591 Mobility enhancements for Aerial vehicles - simulation results Nokia, Nokia Shanghai Bell discussion Rel-15 FS_LTE_Aerial
R2-1708237 Field trial results on handover performance for aerial vehicles Qualcomm Incorporated discussion Rel-15 FS_LTE_Aerial
R2-1708975 Consideration for potential mobility enhancement for aerial UE Lenovo, Motorola Mobility discussion Rel-15 FS_LTE_Aerial
R2-1708667 Potential mobility enhancements for UAVs Nokia, Nokia Shanghai Bell discussion Rel-15 FS_LTE_Aerial
R2-1708542 Potential enhancements for drones in idle state Huawei, HiSilicon discussion Rel-15 FS_LTE_Aerial
R2-1708545 Measurement report mechanism for Drones Huawei, HiSilicon discussion Rel-15 FS_LTE_Aerial
R2-1708666 LOS/NLOS switching in mobility simulations Nokia, Nokia Shanghai Bell discussion Rel-15 FS_LTE_Aerial
R2-1709462 Handover Failure Handling of Aerial UE LG Electronics Inc. discussion Rel-15 FS_LTE_Aerial
R2-1709463 Handover Support for Aerial UE LG Electronics Inc. discussion Rel-15 FS_LTE_Aerial
R2-1709520 Considerations for cell selection and reselection with UAVs Kyocera discussion Revised to R2-1709699
R2-1709699 Considerations for cell selection and reselection with UAVs Kyocera discussion

9.4.5 Identify certification

(Identification of an air-borne UE that does not have proper certification for connecting to the cellular network while air-borne)

R2-1709397 On UAV UE identification NTT DOCOMO INC. discussion FS_LTE_Aerial

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Agreement:
1 The license/certification related identification is necessary for UAV UE from RAN2 point of view and to consult SA2, SA3 and RAN3 on the details

CB on Friday: => Draft LS in R2-1709744 to consult SA2, SA3 and RAN3 the above agreement. (DOCOMO) (offline number 286)

R2-1708668 Discussion on non-certified air-borne UE detection Nokia, Nokia Shanghai Bell discussion Rel-15 FS_LTE_Aerial

Agreements:

1 The solution developed for interference detection within this SI should allow for detection of potentially air-borne UEs causing excessive interference, including UEs non-certified for aerial usage and UEs not implementing Rel-15 UAV functions.
2 Capture in the TR that the developed solution should allow for:
Identifying the potentially air-borne UE, which is a source of excessive interference
Checking whether this UE is an air-borne UE
Verify whether this UE is authorized to act as an air-borne UE

R2-1708238 Identification and certification of Drones Qualcomm Incorporated discussion Rel-15 FS_LTE_Aerial
=> Noted

R2-1708543 Identification of Air-borne UE Huawei, HiSilicon discussion Rel-15 FS_LTE_Aerial
=> Not treated

R2-1708551 Draft LS on Identification of Air-borne UE Huawei, HiSilicon discussion Rel-15 FS_LTE_Aerial
=> Not treated

R2-1708660 Discussion on identification and certification of Aerial Vehicles Sony discussion Rel-15 FS_LTE_Aerial
=> Withdrawn

R2-1708664 Identify certification for drones Ericsson discussion Rel-15 FS_LTE_Aerial
=> Not treated

R2-1708669 Air-borne UE identification mechanism Nokia, Nokia Shanghai Bell discussion Rel-15 FS_LTE_Aerial
=> Not treated

R2-1708976 Consideration for identification issues for drone UE Lenovo, Motorola Mobility discussion Rel-15 FS_LTE_Aerial
=> Not treated

R2-1709461 Aerial UE Identification LG Electronics Inc. discussion Rel-15 FS_LTE_Aerial
=> Not treated

R2-1709517 Discussion on identification and certification of Aerial Vehicles Sony discussion Rel-15 FS_LTE_Aerial
=> Noted

✉ **[99#38][LTE/UAV] Running TR36.777 (DOCOMO)**
Intended outcome: Running TR
- Capture the agreements from this meeting
Deadline: 2017-09-28

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9.4.6 Others

R2-1709460 Aerial Traffic Handling using Positioning Identification LG Electronics Inc. discussion Rel-15 FS_LTE_Aerial
=> Not treated

9.5 Further video enhancements for LTE

(LTE_ViLTE_enh2-Core; leading WG: RAN2; REL-15; started: Mar. 17; target: Dec. 17: WID: RP-171392)

Time budget: 0.5 TU

Documents in this agenda item will be handled in a break out session

9.5.1 General

(work plan)

9.5.2 Local caching for UE assistance video request

Including output from email discussion [98#45][LTE/ViLTE] Identify the benefits of UE assistance information and corresponding solutions (CMCC)

R2-1708991 Email discussion report[98#45][LTEViLTE] Identify the benefits of UE assistance information and corresponding solutions CMCC discussion Rel-15 LTE_ViLTE_enh2-Core
=> Noted

R2-1708992 Motivation and solutions for UE assisted local caching CMCC discussion Rel-15 LTE_ViLTE_enh2-Core
=> Noted

R2-1708294 Benefits of UE assisted information and solutions Qualcomm Incorporated discussion Rel-15 LTE_ViLTE_enh2-Core
- Nokia think the benefit from the architecture which is ruled out from RAN3.
=> Noted

CBF: => Offline discussion on how to progress the issue of local caching (CMCC). Report to the main session. Report in R2-1709745 (offline number 2000)

9.5.3 Enhancement to solve the problem of critical data discard

Including output from email discussion [98#55][LTE/ViLTE] Solutions for critical data identification (Intel)

R2-1709042 Email discussion report on [98#55][LTE/ViLTE] Solutions for critical data identification Intel Corporation discussion LTE_ViLTE_enh2-Core
=> Noted

Agreement
It is left up to UE implementation how the UE AS is aware of UL upper layer critical data within a given DRB of one user.

L2 differentiated handling:

R2-1707940 Discussion on L2 differentiated handling for upper layer critical data Huawei, HiSilicon discussion Rel-15 LTE_ViLTE_enh2-Core
- LG think it is not necessary to introduce additional timer.
- Intel think it should left to UE implementation.
=> Noted

R2-1709219 Discussion on different discard timer LG Electronics France discussion Rel-15 LTE_ViLTE_enh2-Core

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=> Not treated

R2-1707777 Discussion on open issues of eVideo OPPO discussion

=> Not treated

R2-1708642 L2 differentiated handling for critical data Ericsson discussion Rel-15 LTE_ViLTE_enh2-Core

=> Noted

R2-1708295 Discussion on L2 differentiated handling for critical data Qualcomm Incorporated discussion Rel-15 LTE_ViLTE_enh2-Core

- Intel and Qualcomm support the solution in R2-1708295.

=> Noted

Awareness of critical data:

R2-1709043 Solution details to enhance critical data handling Intel Corporation discussion LTE_ViLTE_enh2-Core

- Ericsson think this solution will confuse eNB.
- Nokia think there may be some benefit to know this information.

=> Noted

R2-1707948 Discussion on awareness of critical data in the UL buffer Huawei, HiSilicon discussion Rel-15 LTE_ViLTE_enh2-Core

R2-1708643 Awareness of critical data in UE buffer Ericsson discussion Rel-15 LTE_ViLTE_enh2-Core

=> Noted

CBF: => Offline discussion on how to progress on awareness of critical data. Report the result to main session in R2-1709746 (offline number 299). (Intel)

The following papers are not treated:

R2-1707941 Introduction of additional PDCP discard timer Huawei, HiSilicon CR Rel-15 36.300 14.3.0 LTE_ViLTE_enh2-Core 1044 B

R2-1707944 Introduction of additional PDCP discard timer Huawei, HiSilicon CR Rel-15 36.323 14.3.0 LTE_ViLTE_enh2-Core 0201 B

R2-1707945 Introduction of additional PDCP discard timer Huawei, HiSilicon CR Rel-15 36.306 14.3.0 LTE_ViLTE_enh2-Core 1487 B

R2-1707947 Introduction of additional PDCP discard timer Huawei, HiSilicon CR Rel-15 36.331 14.3.0 LTE_ViLTE_enh2-Core 2973 B

R2-1707949 Introduction of awareness of critical data in the UL buffer Huawei, HiSilicon CR Rel-15 36.300 14.3.0 LTE_ViLTE_enh2-Core 1045 B

R2-1707950 Introduction of awareness of critical data in the UL buffer Huawei, HiSilicon CR Rel-15 36.321 14.3.0 LTE_ViLTE_enh2-Core 1135 B

R2-1707951 Introduction of awareness of critical data in the UL buffer Huawei, HiSilicon CR Rel-15 36.306 14.3.0 LTE_ViLTE_enh2-Core 1488 B

R2-1707952 Introduction of awareness of critical data in the UL buffer Huawei, HiSilicon CR Rel-15 36.331 14.3.0 LTE_ViLTE_enh2-Core 2974 B

9.5.4 Others

9.6 QoE Measurement Collection for streaming services in E-UTRAN

(LTE_QMC_Streaming; leading WG: RAN2; REL-15; started: Dec. 17; target: Jun. 17: WID: RP-170956)

Time budget: 0.5 TU

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Documents in this agenda item will be handled in a break out session

Including output from email discussion [98#51][LTE/QMC] Solutions for QoE Measurements

9.6.1 General

(work plan)

9.6.2 QoE measurement collection solutions

R2-1708299 Email discussion summary on solutions for LTE QMC China Unicom discussion Rel-15 LTE_QMC_Streaming, LTE_QMC_Streaming-Core
- Vodafone support CP solution.

=> Noted

R2-1707953 Discussion on CP solution for QMC Huawei, HiSilicon discussion Rel-15 LTE_QMC_Streaming-Core
- Nokia think introducing a new SRB will bring huge work

=> CP based solution is used for QoE measurement collection if the solution can provide RAN control on the measurement collection.

=> Introducing a new SRB is not ruled out and can be further analysed.

✉ **[99#39][LTE/QMC] RAN controlled CP based solution (Huawei)**

Intended outcome: Report to next meeting
- Figure out the details of CP solution with a mechanism to control the measurement report by RAN
- The spec impact should be identified for the proposed mechanisms.

Deadline: 2017-09-28

R2-1708618 Solutions for QoE Measurements Ericsson discussion Rel-15 LTE_QMC_Streaming

=> Noted

R2-1707954 Open issues on UP solution for QMC Huawei, HiSilicon discussion Rel-15 LTE_QMC_Streaming-Core

=> UP solution is not pursued for QoE measurement collection.

The following papers are not treated:

R2-1709426 UP solution (solution3) for LTE QMC Nokia, Nokia Shanghai Bell discussion

R2-1708619 Start and stop of QoE Measurements Ericsson discussion Rel-15 LTE_QMC_Streaming

R2-1709428 Out of RAN control issue in LTE QMC mechanism Nokia, Nokia Shanghai Bell discussion

R2-1707955 Introduction of QoE Measurement Collection for LTE 36.300 14.3.0 LTE_QMC_Streaming-Core Huawei, HiSilicon CR 1046 B Rel-15

R2-1707956 Introduction of QoE Measurement Collection for LTE 36.306 14.3.0 LTE_QMC_Streaming-Core Huawei, HiSilicon CR 1489 B Rel-15

R2-1707957 Introduction of QoE Measurement Collection for LTE 36.331 14.3.0 LTE_QMC_Streaming-Core Huawei, HiSilicon CR 2975 B Rel-15

9.6.3 Others

R2-1709464 draft LS on the progress of QMC for LTE Huawei, HiSilicon discussion Rel-15 LTE_QMC_Streaming-Core

=> Not treated

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9.7 LTE connectivity to 5G-CN

(LTE_5GCN_connect-Core; leading WG: RAN2; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-171432)

Time budget: 1.5 TU

At this meeting, due to the commonality with NR, this WI will be handled in the main session.

9.7.1 Organisational

Including incoming LSs, rapporteur inputs, running CRs

Principles on what to specify in which specs, terminology, etc

R2-1707604 LS on E-UTRA connected to 5GC (C1-172641; contact: Qualcomm) CT1 LS in Rel-15 5GS_Ph1-CT

=> Noted

R2-1707650 Reply LS on Supported features by 5GC for E-UTRA connected to 5G CN (S2-175192; contact: Nokia) SA2 LS in Rel-15 5GS_Ph1

- Nokia explain that we need to answer the DRX question with a value.

=> Noted

R2-1707657 Response LS on LTE connectivity to 5G-CN (S2-175310; contact: Qualcomm) SA2 LS in Rel-15 5GS_Ph1, NR_newRAT-Core

=> Noted

9.7.2 Stage 2 aspects

Impact on E-UTRA due to CN type selection, slicing, new QoS, potentially different ACB, inactive state, inter-RAT mobility (e.g. between E-UTRA/5GC and E-UTRA/EPC), etc. Note that inter-RAT mobility between NR Inactive and E-UTRA/5GC Inactive will be discussed under NR agenda item 10.4.1.6.4

LTE/5GC feature support

R2-1708837 Supporting 5GC features over E-UTRA Intel Corporation discussion

P1

- Ericsson think MDT has some CN impact and might not be able to be supported. SON is also a big set of features and not clear all can be supported.
- LG also think that MDT has CN impact and wonder if it can be supported. LG also think legacy AC can be supported.
- Huawei think positioning may have some impact. Also assume there could be some impact to DC.

P2

- LG think a UE connected to 5GS might be able to do some of these features in parallel without connecting to EPC.
- DT think SA2 said they would not specify a way to move to EPC for a UE that wants these services. But we should have some assumption that UE can prioritise EPC.
- Samsung thinks the proposal give too much freedom to the UE and it should be more controlled by the network. ZTE have a similar view and think it needs to be controlled by NAS. Intel would support an LS to SA2 to think about this further.
- Vodafone think that if UE connects to 5GC then that it is an these services are not available. Assume a UE with for example subscription to MBMS will not have an 5GS subscription and hence never connect to 5GS.
- CATT think we should focus on UE support just one RAT at a time.

P3

- Ericsson think that msg 3 or msg 5 needs to be discussion.

P4

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- LG think that the R13 CIOT optimisation is not supported in the CN. Intel clarify the intention is that this refers to CP and UP optimisation.
- Huawei support the proposal. Qualcomm also support the proposal.
- Ericsson think this is FFS in SA2. From RAN2 side there would be no additional complexity.

=> Offline discussion to progress the table to clearly capture the scope of features that need to be worked on within this WI. Also conclude whether to send LS to SA2/CT1/etc on how the UE behaves if desired services (e.g. MBMS) are not available via the 5GC (Offline discussion #25)

Agreements
1 CIoT CP and UP optimizations are not supported for E-UTRA/5GC and NR/5GC in Rel-15

- Update from offline R2-1709917:

R2-1709917 Offline discussion #25: 5GC features over E-UTRA Intel Corporation

=> RAN2 should focus on the following features: Flow based QoS framework (including related impacts on Dual Connectivity), Access Control, Inactive, Slicing, EPC/5GC selection indication.

R2-1709918 LS on CN node selection for LTE features when E-UTRA is connected to 5G CN Intel LS out

=> Remove "(e.g., eMBMS requiring network connection, D2D and V2X in coverage)"
=> Approved in R2-1709981

R2-1709553 Impact of 5GC on LTE features Ericsson discussion

R2-1708394 Discussion on how to handle 5GC features for ng-eNB based on LS S2-175192 Huawei, HiSilicon discussion

CN type selection

R2-1707749 CN selection for E-UTRAN connected to 5G CN Samsung discussion

P1

- Vodafone think this should be done by the NAS node selection function in the eNB. Think it can be done by DCN ID.
- Intel think it is not so simple as there are 2 different NAS entities and the selection of which one to use doesn't belong to either of these NAS entities.
- Lenovo think that the broadcast indicator will need to be provided to NAS.
- ZTE think the select will be performed by NAS.
- Huawei think the important thing to discuss is what information that needs to be provided to the UE.
- Qualcomm agree that this has to be handled by upper layers.

Agreements
1: From RAN2 perspective we assume that selection between EPC and 5G-CN in the UE is performed by upper layers (i.e. it is not an AS function).

R2-1707796 CN selection when accessing Ericsson discussion

P3

- Qualcomm prefer to use the cell barring flag. Reserved for operator use is intended for a different use case.
- Xiaomi think that the barred flag doesn't work for RAN sharing case when some PLMNs connect to 5GC and other do not.

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- Huawei think barred flag think UE will be barred for the whole cell which doesn't work for sharing case. Could use the combination of barring and reservation flag.
- Ericsson think barred flag would be used if all PLMNs cannot access 5GC, and not all PLMNs cannot access 5GC then the reserved flag can be used and only UEs with certain access classes would not be barred.
- Qualcomm explain that we cannot have an empty PLMN list in the legacy signalling. We could have a new list for the PLMNs that do support 5GC..

Agreements
1 An LTE ng-eNB can belong to multiple PLMNs and for each PLMN, it can be connected to: (1) EPC only, (2) both EPC and 5GC or (3) 5GC only.
2 In case that a PLMN in an LTE eNB is connected to 5GC only, the UEs only capable of EPC-NAS should be prevented from camping and should reselect to a different cell.
3 For the case that all the PLMNs only have access to 5GC then UEs capable only of EPC-NAS can be barred using cellBarred flag in SIB1 which the 5GC-NAS capable UEs ignore. To provide the current cell barring flag functionality to 5GC-NAS capable UEs, a corresponding new flag is introduced for those UEs (e.g. “cellBarred-5GC”).
FFS for the case that only some PLMN only have access to 5GC
4 In LTE, the system information should be extended to include information about the available CN per PLMN.

R2-1707786 Preventing Legacy LTE UEs from camping on eLTE Cells & PLMNs connected to New 5G Core Network only Qualcomm India Pvt Ltd discussion
R2-1707816 Consequences of 5GC-only eNBs Nokia, Nokia Shanghai Bell discussion
R2-1707975 CN Type Selection Spreadtrum Communications discussion
R2-1708151 Consideration on CN type indication ZTE Corporation discussion
R2-1708245 CN Type Selection in LTE Connectivity to 5G-CN CATT discussion
R2-1708395 Handling on E-UTRA cell which only connects to 5G Core Huawei, HiSilicon discussion
R2-1708401 Network selection for initial access in E-UTRA connected to 5GC Huawei, HiSilicon discussion

QoS/user plane

R2-1708400 Flow based QoS framework for E-UTRA connected to 5GC Huawei, HiSilicon discussion

Agreements
1: The QoS framework principles agreed for NR should be applied for E-UTRA connected to 5GC, and same SDAP layer is introduced to support flow based QoS framework. RAN2 expects no impact to RLC/MAC as a result of adding the support for the new QoS framework.
2 LTE RRC needs to be enhanced to configure UE SDAP (same SDAP configuration content as for NR)
3: Changes on LTE DC due to new QoS frame work will be discussed after NR has concluded in this topic
4: The details on how to support flow based QoS for intra system handover and inter system handover (between LTE/EPC and LTE/5GC) can be discussed later once NR has agreements on it.

R2-1708834 PDCP for E-UTRA connected to 5GC Intel Corporation discussion
- Huawei think it is reasonable to use NR-PDCP for all DRBs. OPPO also support. Qualcomm is also ok with adoption of NR-PDCP, and can help with handover to NR. Qualcomm assume 5G security will be used so it makes sense to use NR-PDCP.
- Ericsson is not yet convinced to use NR-PDCP. The main differences is the duplication function. LG don’t see the concern with using NR-PDCP.
- Ericsson think it is not useful to tie together the 2 RATs in this way.
- Huawei think that for options 7 it will make it easier to support if we use NR-PDCP.

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- Intel think the CN impact into the RAN and the changed QoS model is the reason we end up with this proposal.
- ZTE think we can do this now we have agreed to use NR-PDCP for EN-DC

Agreements
1: For UEs that are connecting via E-UTRA to 5GC, only NR PDCP is used for the DRBs. Also applicable for option 7 and option 4.

R2-1707792 QoS for LTE connected to 5GC Ericsson discussion
R2-1708399 Discussion on NR PDCP usage for ng-eNB Huawei, HiSilicon discussion

Access control

R2-1708246 Access Control forLTE Connectivity to 5G-CN CATT discussion

R2-1709304 Access control for LTE connected to 5G-CN LG Electronics Inc. discussion

- Discussed together with the previous paper.
- Huawei think SA2 and CT1 do not want to support legacy behaviour in 5GC and to avoid that we need to support the new AC mechanism. CATT have similar view as Huawei and the conclusions in our paper are derived from SA2 LS.
- Qualcomm also agree with Huawei. Intel have the same view and understand that the 5G NAS would like to behave the same in when connected via both RATs. ZTE also support this view. CMCC also support this.
- DOCOMO have big sympathy for LGs approach to avoid the impact to LTE RRC. NEC have the same view as LG.
- Ericsson also support the CATT proposals to enable support of slicing and avoid impact to NAS.
- Vodafone think we should support the 5G AC. Would like the 5G AC to remain simple.
- DT think the support of slicing is very important.
- LG think to use the new mechanism will require asking SA1 as it is based on current requirements from SA1. Also if the UE supports both mechanisms then the UE could choose the one that enables access.
- Huawei assume that for this case we should follow the 5G requirements from SA1.
- LG wonders how SSAC will work if we go for NR AC.

Agreement
1. Access barring mechanism for LTE connectivity connected to 5GC is based on unified access barring mechanism for NR.
2. LTE ng-eNB connected to both EPC and 5GC can broadcast the access control information for E-UTRAN connected to EPC and E-UTRAN connected to 5GC. UE uses the information based on the core network type indicated from upper layers.

R2-1707794 LTE access control when connected to 5GC Ericsson discussion
R2-1708397 Access Control for UE accessing 5GC via LTE Huawei, HiSilicon discussion
R2-1708453 Design principles for LTE connectivity to 5G-CN LG Electronics Inc. discussion
R2-1709393 Consideration on Access control for LTE connected to 5GC China Telecom discussion

Inactive

R2-1708810 INACTIVE feature when E-UTRA is connected to 5GC Intel Corporation discussion
P1

- LG agree to have as much commonality as possible with NR inactive. But for security optimisations we prefer not to support in LTE. Intel think we should wait for the conclusions in NR on the security optimisations.

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- Huawei think the objective is not to add new features just because they were adopted for NR. Also wonder what is happening with LTE connected to EPC.
- Qualcomm think we take both NR inactive and light connection into account and reuse existing work as much as possible. Intel agree that a lot of what we did for light connection can be reused.
- Ericsson think the light connection discussion already influenced the NR inactive discussion. We should try to align across all 3 cases.

=> Noted

R2-1708552 Discussion on Inactive Mode for E-UTRA connected to 5GC Huawei, HiSilicon discussion
R2-1707750 INACTIVE state for E-UTRAN connected to 5G CN Samsung discussion
R2-1707795 Inactive state in LTE Ericsson discussion
R2-1708244 Inactive State Modelling in LTE Connectivity to 5G-CN CATT discussion
R2-1709106 INACTIVE state in eLTE LG Electronics Inc. discussion
R2-1709112 Support for PLMN selection while in INACTIVE state in eLTE LG Electronics Inc. discussion

Slicing

R2-1708402 Network slicing for E-UTRA connected to 5GC Huawei, HiSilicon discussion

P2

- Sony think there is concern about carrying the assistance information unprotected.

Agreements
1: Align the support of network slicing in E-UTRA connected to 5G CN with NR.
2: Provision of slicing assistance information for the purpose of initial NAS routing will follow the decisions taken for NR.
3: The impact on LTE from network slicing-related open issues is FFS, and whether LTE needs to support all the network slicing operations of NR should be discussed once NR has agreed on them.

R2-1707793 Slicing for LTE connected to 5GC Ericsson discussion
R2-1709306 Network slicing information delivery for E-UTRA connected to 5GC LG Electronics Inc. discussion

Inter-RAT mobility

R2-1707797 IDLE/INACTIVE mobility to GERAN/UTRAN/CDMA2000 Ericsson discussion
R2-1707839 Inter-system and inter-RAT mobility for LTE connected to 5GC Ericsson discussion
R2-1708398 Discussion on mobility scenario for E-UTRA connected to 5GC Huawei, HiSilicon discussion
R2-1708436 Mobility issue in LTE connected to NextGen Core vivo discussion
R2-1708942 LTE Handover with CN Type Change for E-UTRA connected to 5GC LG Electronics Inc. discussion
R2-1709516 Handover involving EPC and 5GC Sony discussion

Other

R2-1707785 Considerations on LTE connectivity to 5G-CN Qualcomm discussion
R2-1707790 Security aspects of supporting LTE connected to 5GC Ericsson discussion
R2-1708403 Support of 5GS security in E-UTRA connected to 5GC Huawei, HiSilicon discussion

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R2-1707791 Draft LS to SA3 on security aspects Ericsson LS out
R2-1707840 Message 3.5 in LTE connected to 5GC Ericsson discussion
R2-1708396 [DRAFT] Reply LS on response LS on LTE connectivity to 5G-CN Huawei LS out
R2-1708435 General Aspects on LTE connected to 5GCN vivo discussion

Late

R2-1708659 Handover involving EPC and 5GC Sony discussion
R2-1708980 LTE cell barring for E-UTRAN connected to 5G CN Samsung discussion

Withdrawn

R2-1707841 Impact of 5GC on LTE features Ericsson discussion

9.8 Positioning Accuracy Enhancements for LTE

(LCS_LTE_acc_enh-Core; leading WG: RAN2; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-171508)

Time budget: 1 TU

Documents in this agenda item will be handled in a break out session

9.8.1 Organisational

Including incoming LSs, rapporteur inputs, running CRs

R2-1709678 Reply LS on encrypting broadcasted positioning data (S3-172134; contact: Ericsson) SA3 LS in Rel-15 LCS_LTE_acc_enh-Core To:RAN2 Cc:SA2

⇨ Noted

R2-1709558 Updated work plan for UE Positioning Accuracy Enhancements for LTE work item Nokia, Nokia Shanghai Bell discussion Rel-15 LCS_LTE_acc_enh-Core

⇨ Noted

9.8.2 GNSS positioning enhancements

RTK payload transmission, transparent or not? Supported RTK techniques, SSR, VRS, PPP, etc? The details on the support of UE based and UE assisted; The details about unicast and broadcast of RTK assistance data;

RTCM signalling

R2-1708518 Comparison of Options for RTK Support in 3GPP Qualcomm Incorporated discussion Rel-15 LCS_LTE_acc_enh-Core

> Based on the discussion and comparison of the two Options for supporting RTK in 3GPP above, it is proposed that RAN2 commence with the specification work for Option 2 ("LPP A-GNSS Approach"). The work can be done in two phases, for example: […]

R2-1709546 Discussion on RTK assistance data payload Huawei, HiSilicon, Deutsche Telekom discussion

Proposal1: The corrections data shall be transmitted as a transparent RTCM payload.
Proposal2: Support of multiple instances of RTCM messages in SIB.

Above 2 documents discussed jointly

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- Ericsson ask what exactly is meant by “transparent”
- DT: means that we do not re-encode all the messages in ASN.1, to carry the RTCM signalling as a payload
- Ericsson wonder how the other procedures such as UE capability, positioning information, would be handled. DT clarify they would not be part of the transparent container.
- Ericsson foresee a large task for the UE to understand which parts of the transparent container it needs.
- DT think it would be possible to have some kind of header but not import the full messages into our ASN.1, to provide some assistance for the UE to read the message. The header could be outside the transparent container. So some part of the RTCM signalling would still need to be represented in ASN.1.
- Ericsson wonder about how much involvement from the location server in the contents of the RTCM messages e.g. for different services, different satellite systems, etc.
- DT would not assume it is fully transparent to the server, they are thinking more of the radio perspective.
- Ericsson wonder if we would send multiple requests for separate services, or send one request and have to decode which part of the response applies.
- Nokia consider that the E-SMLC and eNB would not have to understand the data fields of the RTCM message but only serve as transport through broadcast means.
- Qualcomm think what is meant in the HW/DT paper by “transparent” is just the encoding, i.e. the content of the OCTET STRING would be encoded with an RTCM encoder instead of ASN.1 encoder. They think assistance data request, UE capability etc. are being ignored in the transparent approach.
- Nokia think the transparent approach is primarily for UE-based. Since we agreed to have UE-assisted also, does the E-SMLC need to understand some of the assistance data?
- Nokia wonder about the impact on testing efforts. For option 2 they assume RAN5 would have to define test cases for the contents.
- DT ask about the SSR situation if we go with option 2. If we don’t want to include all the ongoing work of another SDO, how do we do the re-encoding?
- QC see rather that option 1 has difficulty supporting SSR, because you have to wait until the spec is available and the other messages e.g. assistance data request would have to be touched for compatibility. With option 2 it is under our control when and how we move forward with SSR/PPP.
- Nokia think with option 2 we would standardise the SSR methods fully under 3GPP. Under option 1, SSR is supported only as far as RTCM completes the SSR work, otherwise it depends on proprietary messages.

Option 1: transparent container (RTCM encoded GNSS assistance data) – 6
Option 2: LPP A-GNSS approach (ASN.1 encoded GNSS assistance data) – 5

- Qualcomm think we should defer the decision while we continue with the other work, and the encoding will come clear.
- Nokia are sceptical that we can proceed without making this decision. Option 2 may require us to discuss the scope of the methods to be supported. Maybe we could wait one more meeting but we need to make progress.
- DT agree this is an important decision. It could be raised to the plenary.
- Huawei and Nokia suggest email discussion.

[99#47][LTE/Positioning] RTK assistance data encoding (Huawei)
To finalise the pros/cons of the two options and try to reach a consensus for one, considering the longer term concerns as well as Rel-15. Start from the table in R2-1708518.
Deadline: for next meeting

- Nokia wonder if the transparent approach would have specific supported methods or be completely agnostic.
- Ericsson think there could be an initial phase of limited support, followed by changing over to a more agnostic approach in a non backward compatible way. So it can be good to support some backward compatibility for this kind of development.

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- Nokia note the HW/DT proposal included multiple containers. We haven't discussed the message size and segmentation but it appears there would be multiple instances with different sized messages. So there could be some complexity.

R2-1709404 GNSS augmentation via cellular networks for accurate positioning Ericsson discussion Rel-15

SSR/PPP support

R2-1709559 RTK GNSS positioning enhancement Nokia, Nokia Shanghai Bell discussion Rel-15 LCS_LTE_acc_enh-Core

- Nokia think the picking and choosing of P3 may not be needed for the container approach. Qualcomm agree for the broadcast portion but for the UE request and the unicast delivery it cannot be transparent.
- DT think these proposals still depend on the decision about encoding.
- Qualcomm and Ericsson are fine with the proposals.
- Huawei think we should support SSR message types. Qualcomm point out this cannot be supported for version 10403.3.
- Nokia agree. The only way SSR can be supported with this version is through proprietary messages.
- DT think the container approach gives the flexibility to support early deployment.
- Ericsson think we could agree P1-P3 as a baseline and still be open to SSR in addition.
- ESA are fine with P3 and note that Galileo and BeiDou are supported in the MSM messages.

Agreements:
1: Use the RTCM Standard 10403.3 OSR message types and data fields to support network RTK.
2: VRS should be considered as a viable network RTK technique implemented using SIB broadcast.
3: Support at least the following RTCM message types:
- Observation message types using MSM definitions (1071 – 1127).
- Station Coordinates messages (1006).
- Receiver and Antenna Descriptors (1033).
- GLONASS code-bias information (1230).
- MAC Network RTK messages (1014, 1017, 1030, 1039, 1031).
- FKP Network RTK messages (1034, 1035).
These agreements comprise a baseline and additional support can be discussed.

R2-1709406 On support of SSR and PPP Ericsson discussion Rel-15

R2-1708646 Discussion on State Space RTK Corrections u-blox AG discussion Rel-15

Phase measurements

R2-1708520 UE Measurements for RTK Qualcomm Incorporated discussion Rel-15 LCS_LTE_acc_enh-Core

- Wait on P1 for RAN1 and to give companies a chance to check the RAN1 definition

2: Extend the currently 8-bit *GNSS-SignalID* in LPP to 32-bits with the mapping defined in [12].
3: Extend the ADR measurement report in LPP from currently 25-bits to 29-bits, with resolution of 2^{-10} meters (INTEGER(0..536870911)).

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4: Add an *adrRMSerror* field to the GNSS measurement report in LPP [5] defined as "RMS error of the continuous carrier phase" (INTEGER(0..127) with resolution 2^{-10} meters).
5: Extend the *codePhase* measurement report in LPP [5] from currently 21-bits to 24-bits (INTEGER(0.. 16777215) with 2^{-24} milli-seconds resolution.
Will be captured in stage 3

R2-1709408 UE assisted RTK GNSS measurements Ericsson discussion Rel-15

- Ericsson think we need to discuss how to ensure the ADR measurement gives sufficient information for ambiguity resolution.
- Qualcomm agree with P2.

2 To add "adr" sign to allow the full range of carrier phase measurement direction.
4 To send an LS to RAN1 and RAN4 on the carrier phase measurement agreements.

[CB 500] LS to RAN4 Cc: RAN1 on the measurement agreements (Nokia, R2-1709755)

UE-based RTK

R2-1709548 Discussion on unicast RTK positioning Huawei, HiSilicon discussion

- Nokia wonder if we need the new procedure in P2. The E-SMLC already has the ability to get the approximate location of the device.
- Ericsson agree with Nokia and wonder if "procedure" is what is meant. The position does not need to be very accurate.
- Huawei agree the existing message can be used to get the UE's location. They want to check if the legacy mechanism can be reused. "New procedure" may not be needed.
- Qualcomm: all the methods today require an approximate location, so this is an existing feature already. Intel agree.
- LG wonder if the UE and network both support UE-assisted and UE-based, who decides?
- Huawei indicate the decision is at the E-SMLC and P1 just provides the UE capabilities.
- Qualcomm ask if RTK would be a new method under these proposals, or is it a GNSS positioning method?
- Ericsson think P1 doesn't add to the existing UE-based/UE-assisted support.
- Leave details for stage 3.

⇨**Noted**

9.8.3 Support for IMU positioning

The details of IMU raw data; the sceanrio and benefits on how to use IMU raw data;

Use cases and measurements

R2-1708521 IMU positioning Qualcomm Incorporateddiscussion Rel-15 LCS_LTE_acc_enh-Core

- Ericsson emphasise it's important that these measurements be referenced to a well-defined coordinate system.
- Nokia ask how the UE trajectory would be quantised/reported. Qualcomm think a series of location estimates would be possible, but a base location and a series of deltas would be more efficient. The details can be discussed.

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- Huawei wonder if we need more primary measurement results. E.g. number of steps may be the right measurement for a pedestrian use case.
- Nokia ask how the duration is calculated. What are the reference points?
- Qualcomm: for OTDOA e.g., it could be the first and last SFN of the measurements.
- Qualcomm think one use case is to inform the server that the UE is moving during a positioning session, and the duration of positioning is helpful in that case.
- Huawei think additional primary measurements may be needed in between positioning sessions e.g. in case the GNSS signal is lost.
- Intel agree sensors may be used to fill in the gap when a primary positioning method is lost. So we should be cognizant of this use case.
- Ericsson think the data representation will need to be discussed.
- Nokia think some of these use cases are good and are open to discuss as long as the signalling is not very intensive. But we have to look at the specifics.
- Related contributions are invited for the next meeting.

Proposal: Enhance LPP to enable a UE to provide information to an E-SMLC concerning movement of a UE during a location session. Minimally support for items 1-4 in section 4 is proposed for OTDOA. However, item 5 can be considered for OTDOA as well as application of items 1-4 (or 1-5) to other position methods.

1. Duration of positioning;
2. Average velocity of a UE during positioning;
3. Change in velocity of a UE during positioning;
4. Timestamp for each measurement provided by a UE;
5. UE trajectory (e.g. sequence of relative locations with timestamps).

R2-1707994 Discussion on IMU positioning ZTE Corporation discussion

- LG ask what is the benefit if the UE indicates that the IMU was used in the UE-based case. ZTE think it can affect the quality of the estimate.
- QC think there is a confusion between UE-based and standalone. The server automatically knows if UE-based has been used but it can be unclear when standalone is used since the server just asks for a location.
- NextNav think the point could be that you have an IMU-based Provide Location Information.
- ZTE want to be sure that all modes are considered.
- LG agree with NextNav. P2 and P3 may not be necessary in this light. ZTE think P2 is still needed.
- Nokia think P3 is aligned with the QC paper above. We can look at details before taking a final agreement.
- Intel have some reservations about P3. They think the IMU sensors should report raw measurements rather than computed values.
- Huawei think the problem for IMU is that it accumulates, so one-shot reporting may not make sense. The question is whether the filter is in the server or in the UE. Also RAN4 test support could be needed to make the measurements robust. It's difficult to determine the positioning error on the server side.
- Qualcomm have a similar view. We need to make sure we report useful measurements and it's not clear that the raw measurements are useful to the server. The sampling rate can be 200 Hz and will we send 200 messages per second?
- Intel clarify they envision some processing at the UE. So a UE should not be computing velocity and displacement, rather sending acceleration information.
- ZTE agree with Huawei and QC. The amount of reporting for raw data could be very large and require high frequency reporting.
- Ericsson emphasise the need for a coordinate system. It is a combined effort to process these measurements into a relative displacement.

Proposal 1: Due to the feature of IMU, IMU positioning should be considered as the view of hybrid positioning including IMU.

Proposal 2:

1. For the UE-assisted mode, IMU measurements or location information need to be reported to the network side;

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2. For the UE-based mode, adds report Information indicating that IMU as method has been used to enhance the positioning calculation;
3. For the standalone mode, adds report Information indicating that IMU as method has been used to enhance the positioning calculation.

Proposal 3: For UE-assisted, IMU positioning should measure and report the velocity, orientation, and relative position of two measurement intervals of device.

Proposal 4: IMU should be included in LPP elementary messages, such as Request and Provision of Capability and Location Information and Assistance Data.

R2-1709378 Introduction to sensor based positioning enhancements Sony Europe Limited discussion Rel-15 LCS_LTE_acc_enh-Core

R2-1709402 IMU positioning support over LPP Ericsson discussion Rel-15

TP/CR/draft LS

R2-1709159 IMU sensor based positioning Intel Corporation, Ericsson, Sony discussion LCS_LTE_acc_enh-Core

R2-1709409 IMU positioning support over LPP Ericsson CR Rel-15 36.355 14.2.0 LCS_LTE_acc_enh-Core 0186 B

R2-1709410 draft LS on describing acceleration as a universal GAD Ericsson discussion Rel-15

Not available

R2-1709160 Detailed signaling for IMU sensor based positioining Intel Corporation discussion LCS_LTE_acc_enh-Core

9.8.4 UE-based OTDOA positioning

What additional assistance information is required? Note, as second priority

R2-1707995 Discussion on UE-based OTDOA positioning ZTE Corporation discussion

R2-1708523 Introduction of UE-Based OTDOA Positioning Qualcomm Incorporated discussion Rel-15 LCS_LTE_acc_enh-Core

R2-1708525 Introduction of UE-based OTDOA Positioning Qualcomm Incorporated draftCR Rel-15 36.355 14.2.0 LCS_LTE_acc_enh-Core B

R2-1709276 Consideration on UE-based OTDOA positioning LG Electronics Inc discussion Rel-15 LCS_LTE_acc_enh-Core

R2-1709549 Discussion on OTDOA positioning Huawei, HiSilicon discussion

9.8.5 Broadcasting of assistance data

SIB design for the tranmission of A-GNSS, RTK and, as second priority, UE-based OTDOA assistance information. Encryption of assistance data broadcasting (SA3 input is needed);

Encryption

R2-1709400 Encryption of positioning broadcast information Ericsson discussion Rel-15

R2-1709412 draft LS on encrypting broadcasted positioning data Ericsson discussion Rel-15

SIB design and broadcast framework

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R2-1708539 Broadcast of Positioning Assistance Data Qualcomm Incorporated discussion Rel-15 LCS_LTE_acc_enh-Core
R2-1708994 The positioning assistance data broadcasting CMCC discussion Rel-15 LCS_LTE_acc_enh-Core
R2-1709424 Positioning assistance data broadcasting Ericsson discussion Rel-15
R2-1708647 RTK Corrections Distribution u-blox AG discussion Rel-15
R2-1709547 Discussion on the broadcasting of assistance data Huawei, HiSilicon discussion

Not available

R2-1709413 draft LS on provisioning of positioning assistance data via LPPa for broadcast Ericsson discussion Rel-15

9.9 Enhancing CA Utilization

(LTE_euCA-Core; leading WG: RAN2; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-170805)

Time budget: 0.5 TU

Documents in this agenda item will be handled in a break out session

9.9.1 General

Including incoming LSs, work plan, rapporteur inputs, running CRs

R2-1707817 Work plan for Enhancing CA Utilization Rapporteur (Nokia) discussion Rel-15 LTE_euCA-Core
=> Noted
R2-1707818 Solution directions for the enhanced CA utilization Rapporteur (Nokia) discussion Rel-15 LTE_euCA-Core
=> Noted

9.9.2 Delay reduction for SCell set-up

R2-1707819 Analysis of SCell setup delay Nokia, Nokia Shanghai Bell discussion Rel-15 LTE_euCA-Core
- Qualcomm think configuring a SCell to be directly in active state at RRC will introduce power consumption.

=> Noted
R2-1707820 Simulation results of reducing SCell setup delay Nokia, Nokia Shanghai Bell discussion Rel-15 LTE_euCA-Core
- Intel wonder the RRM requirement for the inter-frequency measurement. Nokia think it should be considered.
- Qualcomm and Huawei concern the power consumption on P2. LG don't think so.

Agreements:
1 UE can be indicated an inter-frequency carrier to measure during the idle state. The inter-frequency measurement operation and requirement is FFS. How fast to report the measurement is FFS. The security issue of report is FFS.
2 It is FFS on whether configuring a SCell to be directly in active state at RRC reconfiguration.

R2-1707788 Fast SCell Configuration and Activation Through network assisted RRC_Idle mode measurements Qualcomm India Pvt Ltd discussion Rel-15
- Huawei wonder how P6 works.

=> Noted

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R2-1708903 Reporting idle mode measurement for initial SCell set-up LG Electronics Inc. discussion Rel-15 LTE_euCA-Core

=> Noted

R2-1707787 Fast SCell activation for enhanced CA utilization Qualcomm India Pvt Ltd discussion Rel-15

- Huawei would like to know the difference with DRX.
- Qualcomm clarify that the state can be used to send low periodicity SCell CQI and/or SRS without PDCCH monitoring.
- Nokia wonder the CQI report is new or existing mechanism.
- Intel point that there is no RAN TU for this item.

=> RAN1 impact should be further identified.

R2-1708546 Measurement Enhancement for fast SCell set-up Huawei, HiSilicon discussion Rel-15 LTE_euCA-Core

=> Noted

R2-1708547 Down-selection of IDLE Mode Measurement Report alternatives for fast SCell set-up Huawei, HiSilicon discussion Rel-15 LTE_euCA-Core

=> Not treated

R2-1708550 Delay reduction for SCell Activation Huawei, HiSilicon discussion Rel-15 LTE_euCA-Core

=> Not treated

R2-1709459 Consideration for eCA Configuration LG Electronics Inc. discussion Rel-15 LTE_euCA-Core

=> Not treated

R2-1709532 Enhancing CA Utilization Ericsson discussion Rel-14 LTE_euCA-Core

=> Not treated

9.9.3 Signalling overhead reduction for configuration activation

R2-1707821 Analysis for reducing signalling overhead for SCells Nokia, Nokia Shanghai Bell discussion Rel-15 LTE_euCA-Core

- Intel wonder the common configuration is a new structure or not.
- Ericsson would like to know the motivation of proposal 3.

Agreement:
1 Consider how to reduce the SCell signalling overhead for cases where the configurations of multiple SCells are almost the same (i.e. several parameters have the exact same values).
2 Consider introducing a common SCell configuration that can apply for multiple SCells to help with the signalling. How to design the signalling is FFS.

The following papers are not treated.

R2-1707789 Signalling Optimization for SCell Configuration and Handover Qualcomm India Pvt Ltd discussion Rel-15

R2-1708548 Signalling overhead reduction for SCell Configuration Huawei, HiSilicon discussion Rel-15 LTE_euCA-Core

R2-1708549 Signalling overhead reduction for SCell (de)Activation Huawei, HiSilicon discussion Rel-15 LTE_euCA-Core

R2-1708753 Initial status of SCell for enhancing CA utilization LG Electronics Mobile Research discussion LTE_euCA-Core

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9.9.4 Others

9.10 Enhancements on LTE-based V2X Services

(LTE_eV2X-Core; leading WG: RAN1; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-171069)

Time budget: 1 TU

Documents in this agenda item will be handled in a break out session

9.10.1 General

Including incoming LSs, work plan and rapporteur inputs.

R2-1707613 LS on RAN1 agreements on CA (R1-1709826; contact: Ericsson) RAN1 LS in Rel-15 LTE_eV2X-Core To:RAN2, RAN4

=> Noted.

R2-1707640 Reply LS on the support of Unicast and Groupcast transmission over PC5 for eV2X (S2-173610; contact: LGE) SA2 LS in Rel-15 FS_eV2XARC To:RANCc:SA, SA1, SA3, RAN2

ZTE: Do we have to wait for further SA2 inputs? LG: Supporting unicast may not be so difficult, but we should wait for SA2 conclusion. Huawei: WID clearly said we should wait for SA2 and RAN should make a decision first. Ericsson: Agree with Huawei

=> RAN2 will wait for SA2 and RAN before discussion on the support of unicast and group-cast

=> Noted

R2-1707642 Reply LS on QoS support over PC5 (S2-173877; contact: Nokia) SA2 LS in Rel-15 FS_REAR To:RAN2

Moved to 9.1

R2-1707643 Reply LS on mapping between service types and V2X frequencies (S2-174064; contact: Huawei) SA2 LS in Rel-14 V2XARC To:RAN2, CT1

Moved to 8.13

R2-1707663 LS on support of CACC and platooning applications by 3GPP systems (SAE International) SAE DSRC Technical Committee LS in To:SA2, RAN2 Cc:SA1, RAN1

LG: No need to respond now, Qualcomm: Wait for SA2 response? LG: It's related with the requirement, and anyway SA1 is preparing the response LS, so we should wait. Ericsson: The issues are more related with SA2, Samsung: The LS is just for information. Huawei: Should wait for SA2 response LS.

=> Noted

R2-1707968 Work plan for eV2X in RAN2 Huawei, HiSilicon Work Plan Rel-15

=> For sTTI, RAN2 will wait for RAN1 and/or RAN inputs before the discussion

9.10.2 Carrier aggregation (up to 8 PC5 carriers)

Focus should be on RAN2 aspects.

Identification of RAN2 aspects:

R2-1707970 Discussion on carrier aggregation in eV2X Huawei, HiSilicon discussion Rel-15 LTE_eV2X-Core

Qualcomm: Do we need to discuss which use-cases are supported? The second case may not be required and useful. Huawei: We can start all three cases. LG: RAN1 does not consider all use cases and the second case may not be required. With duplicated packets, it may bring capacity issue. CATT: Duplicated transmission is required for high-reliability requirement and

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note it can be also controlled by NW so capacity issue can be controllable. Ericsson: Agree with Huawei and CATT. Also agree that NW can control when to activate/deactivate. And there will be also Uu packet duplicated transmission related WI (LTE URLLC) anyway. Huawei: RAN2 should discuss and make a decision on which layer will perform duplicated transmission. Samsung: Capacity enhancement should be first prioritized, but it will be also good to study how packet duplication is done, gains and pains. ZTE: RAN2 should have more detailed discussion on the need of duplication transmission ITL: Agree with Huawei and we need to study more details. OPPO: Agree with ZTE, we should study further in RAN2. Huawei: RAN1 already justified the need of duplicated transmission Qualcomm: Not agree with Huawei. LG: Agree with Qualcomm. Companies supporting duplicated transmission seems consider PDCP level duplication, but for Uu, we don't have such a packet duplication in LTE, so reluctant to introduce PDCP level duplication only for SL. We may wait until the end of this year (URLLC WI). Ericsson: Feel sympathy to LG's comment. CATT: Not agree with LG, at least we should be able to study the details, pros and cons. OPPO: We cannot stop study current existing WI to wait for future WI. LG: If we study, first the need should be agreed and then which layer to perform should be studied. Samsung: Agree with LG. Qualcomm: It may need to be deprioritized. LG: Unitl Dec., we can make a decision on the need. LG: CT1 is working on carrier selection

=> Use case 1 and 3 should be supported.

Proposal 1: For sidelink carrier aggregation, a proper carrier selection mechanism needs to be supported from a higher-layer perspective. Details are FFS.

LG: Carrier selection should be based on CBR. Qualcomm: Carrier selection needs to involve high layer interactions. Huawei, CATT, Ericsson: Agrees with Qualcomm.

=> RAN2 will study a proper Tx carrier selection from AS point of view (with the consideration of inter-layer interactions with upper layers)

Proposal 2: PDCP duplication should be supported instead of MAC duplication for sidelink CA enhancement, because of the following facts:

=> FFS on the need (e.g. pros and cons) and details of packet duplicated transmission based on the different mechanism.

Proposal 3: RAN2 should take limited number of Rx chains as the baseline for further sidelink CA enhancements.

LG: Intention is ok, but the UE has to listen to all carriers which mapped to service and the UE is capable OPPO: Limited number of Rx chains is not clear. Huawei: Proposal is related with e.g. carrier selection in Rx point of view or how to coordinate between Tx and Rx. LG: Assume no carrier selection for Rx. Ericsson: Agree with LG. For Rx, NW cannot be aware of UE capabilities. Huawei: From Tx point of view, limited number of Rx chains should be taken into account, that's the proposal. Qualcomm: agrees with Huawei

=> FFS on how to handle limited Rx chains

R2-1709366 Carrier Aggregation Enhancements for PC5 Ericsson discussion Rel-15 LTE_eV2X-Core

Proposal 1 Mode-3 and mode-4 cross-carrier scheduling is already supported in Rel.14. No specific enhancements are foreseen in Rel.15.

Huawei: Cross-carrier scheduling means Uu or SL? Ericsson: It's SL. Qualcomm: If SCI is newly designed in RAN1, we may also have some impacts in RAN2. Ericsson: It's from RAN2 point of view. OPPO: For mode4, actually it's cross-carrier configuration. Huawei: We may need to wait for more RAN1. LG: Agree with Ericsson. Ericsson: For mode3, it may be clear that we don't need any enhancements.

=> Mode-3 cross-carrier scheduling signaling and mode-4 cross-carrier resource pool signaling in Rel-14 is baseline. FFS on the need of further enhancement.

Proposal 2 Introduce a sidelink HARQ entity for each sidelink component carrier.

OPPO: Supports the proposal

=> A SL HARQ entity per SL carrier

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Proposal 3 A sidelink HARQ entity is in charge to perform selection/reselection of transmitting resources according to the sensing results of the associated sidelink component carrier.
ZTE: Resource selection/reselection is more MAC entity's job (not for HARQ entity). OPPO: Agrees with Ericsson, LG: Agrees with Ericsson
=> A sidelink HARQ entity is in charge to perform selection/reselection of transmitting resources according to the sensing results of the associated sidelink component carrier.

Scenarios and options of carrier selection:

R2-1708509 Discussion on PC5 carrier aggregation ZTE Corporation discussion LTE_eV2X-Core

Proposal 1: Both in coverage and out of coverage scenario should be considered for PC5 CA.
LG: CA is applied to Tx or Rx? ZTE: Both Tx and Rx
=> Agrees with proposal1 (i.e. both in coverage and out of coverage scenarios should be considered for PC5 CA)

Proposal 3: RAN2 is suggested to consider the dedicated PC5 carriers for PC5 CA as first priority for the phase 2 V2X.
Huawei: In Rel-14, we do not have any restriction that only B47 is used for V2X. In the protocol point of view, other non-B47 bands should be also supported. ZTE: B47 needs to be first prioritized. Ericsson: How to impact on RAN2 specification if we prioritize b47? Huawei: From the start, we don't need any restriction. Ericsson, Qualcomm, LG: Agrees with Huawei

Proposal 4: Whether mode 3 or mode 4 resource allocation is used on different CCs of PC5 CA depends on the network configuration. It is not necessary to mandate the unified resource allocation mode among aggregated PC5 CCs.
OPPO: Two modes to a given UE? ZTE: For shared carrier, mode3 is used. For dedicated carrier, mode4 can be used. OPPO: It is not supported in the Rel-14. Huawei: In Rel-14, if the UE is connected, only single mode is configured, but we can consider the proposal in Rel-15. OPPO: The need of change is not clear and it will complicate scenarios and configurations. Ericsson: If impacts are high, would like to avoid it. LG, Samsung: Agrees with Ericsson

Proposal 5: RAN2 is suggested to consider the following factors for CC selection of PC5 CA: 1) vehicle UE's PC5 simultaneous Rx/Tx capability; 2) mapping between V2X service type and CC; 3) QoS requirement; 4) carrier loading status; 5) CC measurement result.
Huawei: 2) is done in upper layer or MAC? ZTE: Indicates general options. Nokia: What 5) really means? Is it same as CBR? ZTE: We can refer channel quality and how to define channel quality is FFS. 5) may be more useful for uni-cast and group-cast. Qualcomm: 2) is already existing one. AS still can select subset of carrier which indicated by upper layer.
=> Email discussion to identify options for CC selection of PC5 (Huawei)

Proposal 7: PC5 CCs could be divided into PCC and SCCs. Among them, the PCC could be used to deliver the PC5 control signalling whereas SCC is only used to deliver V2X service data.

Proposal 8: PC5 CC activation/deactivation may be considered to achieve the power efficient sidelink reception.

Resource pool and resource selection in CA:

R2-1708451 Modelling sidelink parallel transmissions for V2X communication LG Electronics Inc. discussion Rel-15 LTE_eV2X-Core

R2-1709003 Carrier aggregation for mode 4 operation Samsung Electronics France SAdiscussion Rel-15 LTE_eV2X-Core

PDCP duplication:

R2-1709006 Discussion on packet duplication in eV2X Samsung Electronics France SAdiscussion Rel-15 LTE_eV2X-Core

SPS in CA:

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R2-1708054	SPS in eV2X when CA is configured	CATT	discussion		
R2-1707699	Packet duplication in CA-based eV2x	OPPO	discussion	Rel-15	LTE_eV2X-Core
R2-1707701	Resource selection in CA-based eV2x	OPPO	discussion	Rel-15	LTE_eV2X-Core
R2-1708039	Discussion on Service and Carrier Mapping for PC5 CA in eV2X	OPPO	discussion		
R2-1708040	Discussion on Carrier Configuration and Selection for PC5 CA in eV2X	OPPO	discussion		
R2-1708052	Carrier configuration and carrier selection in eV2X CA	CATT	discussion		
R2-1708055	Considerations on PC5 Carrier Aggregation	CATT	discussion		
R2-1708062	Discussion on replication transmission over multiple carriers	CATT	discussion		
R2-1709048	Carrier Aggregation over PC5	Intel Corporation	discussion	LTE_eV2X-Core	
R2-1709186	V2X carrier aggregation	Nokia, Nokia Shanghai Bell	discussion	Rel-15	LTE_eV2X-Core
R2-1709225	Carrier selection for carrier aggregation in sidelink mode 3	LG Electronics Inc.	discussion	Rel-15	LTE_eV2X-Core
R2-1709301	Carrier selection for carrier aggregation	LG Electronics Inc	discussion	Rel-15	LTE_eV2X-Core
R2-1709370	On Rel-15 Carrier Aggregation for PC5	Ericsson	discussion	Rel-15	LTE_eV2X-Core
R2-1709371	Packet duplication for PC5	Ericsson	discussion	Rel-15	LTE_eV2X-Core
R2-1709624	Discussion on SPS support with enhanced Carrier Aggregation	Samsung R&D Institute UK	discussion		
R2-1708682	Carrier Aggregation for V2X Phase 2	Qualcomm Incorporated	discussion		LTE_eV2X-Core

9.10.3 Radio resource pool sharing between UEs using mode 3 and mode 4

Focus should be on RAN2 aspects.

Scenarios:

R2-1707700	Resource pool sharing	OPPO	discussion	Rel-15	LTE_eV2X-Core

RAN2-level options:

R2-1707969	Discussion on resource pool sharing between mode3 and mode4 UEs	Huawei, HiSilicon	discussion	Rel-15	LTE_eV2X-Core
R2-1709373	Pool sharing between mode 3 and mode 4	Ericsson	discussion	Rel-15	LTE_eV2X-Core
R2-1708053	Discussion on mode 3 and mode 4 shared resource pool	CATT	discussion		
R2-1708297	Discussion about exceptional pool for resource pool sharing between UEs using mode 3 and UEs using mode 4	Samsung R&D Institute UK	discussion	Rel-15	LTE_eV2X-Core
R2-1708510	Consideration on resource pool sharing between UEs using mode 3 and mode 4	ZTE Corporation	discussion	LTE_eV2X-Core	
R2-1709008	Discussion on resource pool sharing between mode 3 and mode 4 UEs	Samsung Electronics France SA	discussion	Rel-15	
R2-1709049	Resource pool sharing between mode 3 and 4	Intel Corporation	discussion	LTE_eV2X-Core	
R2-1709133	Radio resource pool sharing between UEs using mode 3 and UEs using mode 4	LG Electronics Inc.	discussion	Rel-15	LTE_eV2X-Core
R2-1709187	Resource pool sharing between mode 3 and mode 4	Nokia, Nokia Shanghai Bell	discussion	Rel-15	LTE_eV2X-Core

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R2-1709429 Latency reduction on V2X phase 2 for mode3 and mode 4 resource pool sharing Samsung R&D Institute UK discussion
R2-1709430 Supporting reliability during resource sharing Samsung R&D Institute UK discussion
R2-1708681 Resource pool sharing between Mode 3 and Mode 4 Qualcomm Incorporated discussion Rel-15 LTE_eV2X-Core

9.10.4 Others

Including RAN2 aspects, if any, on the WI objectives 1b (64 QAM), 1c (delay reduction at layer 1), 2 (transmit diversity), and 3 (short TTI).

R2-1707702 Resource selection for sTTI in eV2x OPPO discussion Rel-15 LTE_eV2X-Core
R2-1708269 Considerations on latency related aspects in LTE eV2X Huawei, HiSilicon discussion Rel-15 LTE_eV2X-Core
R2-1708511 Consideration on short TTI based PC5 operation ZTE Corporation discussion LTE_eV2X-Core
R2-1708512 Discussion on support of 64QAM over sidelink ZTE Corporation discussion LTE_eV2X-Core
R2-1709369 Latency reduction for eV2V Ericsson discussion Rel-15 LTE_eV2X-Core
R2-1709427 Latency reduction on V2X phase 2 for UEs using Mode 4 Samsung R&D Institute UK discussion
R2-1708683 Reduction of time between packet arrival and transmisison Qualcomm Incorporated discussion LTE_eV2X-Core

9.11 High capacity stationary wireless and 1024 QAM

(LTE_1024QAM_DL-Core; leading WG: RAN1; REL-15; started: Mar. 17; target: Mar. 18: WID: RP-171067)

Time budget: 0.5 TU

Documents in this agenda item will be handled in a break out session

9.11.1 General

Including incoming LSs, work plan, rapporteur inputs, running CRs

9.11.2 UE capability and potential new categories

9.11.3 Corresponding higher-layer procedures and signalling

9.12 Enhancements to LTE operation in unlicensed spectrum

(LTE_unlic-Core; leading WG: RAN1; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-170848)

Time budget: 1 TU

Documents in this agenda item will be handled in a break out session

9.12.1 General

Including incoming LSs, work plan, rapporteur inputs, running CRs

R2-1708482 Work Plan for Enhancements to LTE operation in Unlicensed Spectrum Nokia, Nokia Shanghai Bell discussion Rel-15 LTE_unlic-Core
=> Noted
R2-1709880 Proposal to progress Autonomous uplink access Nokia discussion Rel-15 LTE_unlic-Core

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=> Noted

9.12.2 Autonomous uplink access on Frame structure type 3

R2-1709355 On the Befits of Autonomous Uplink Access for LAA Ericsson discussion Rel-15 LTE_unlic-Core

=> Noted

R2-1708892 Autonomous uplink access on LBT Huawei, HiSilicon discussion LTE_unlic-Core

=> Noted

R2-1709353 Autonomous Uplink Access for LAA Ericsson discussion Rel-15 LTE_unlic-Core

Agreements:
1 Support UL skipping for AUL i.e. the UE should use AUL resources only when it has data to transmit and UE doesn't have UL grant. FFS if a threshold is configured.
2 From a RAN2 point of view it is beneficial from spectral efficiency perspective to schedule multiple UEs on the same resources in some scenarios.
3 AUL can be configured at the same time in more than one uplink LAA serving cell.
4 FFS: Introduce an AUL activation/deactivation confirmation supporting confirmation of multiple SPS configurations on multiple serving cells.

R2-1709631 Autonomous Uplink Access for eLAA Qualcomm Incorporated discussion

Agreements:
1 The UE does not transmit on autonomous access resources when this subframe is used for DL transmission.
2 The UE does not transmit on autonomous access resources when an UL grant is received for the same TTI.
3 From RAN2 perspective, autonomous access should not be used for retransmission of dynamically scheduled transmissions

R2-1708893 HARQ with autonomous uplink access on LAA SCell Huawei, HiSilicon discussion LTE_unlic-Core

Agreements
1 From RAN2 perspective, both new AUL transmission and retransmission can be performed via resource for autonomous uplink access.
2 Retransmission can be switched from autonomous uplink access to grant-based uplink access.
3 HARQ feedback for autonomous uplink access is supported. FFS: the details of HARQ feedback depends on RAN1.
4 FFS: A maximum number of retransmissions for autonomous uplink access is defined.

R2-1709354 HARQ Design for Autonomous UL Access Ericsson discussion Rel-15 LTE_unlic-Core

Agreements:

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1 From RAN2 perspective, the HARQ protocol for the LAA autonomous uplink access should support asynchronous HARQ retransmissions similar to legacy LAA HARQ.
2 It is FFS, the UE behavior upon reception (or not reception) of an HARQ feedback.

R2-1708894 Impact on MAC with autonomous uplink access Huawei, HiSilicon discussion LTE_unlic-Core

Agreements:
1 MAC CEs are allowed to be sent via autonomous uplink transmission
2 If there is resource for both grant-based and autonomous transmission in a TTI for different cells, it is left to UE implementation whether MAC CEs are sent through grant-based or autonomous transmission

R2-1709047 Autonomous Uplink Access on Frame structure type 3 Intel Corporation discussion LTE_unlic-Core
=> Not treated

R2-1708483 Autonomous uplink access Nokia, Nokia Shanghai Bell discussion Rel-15 LTE_unlic-Core
=> Not treated

R2-1709319 Autonomous uplink access in LAA LG Electronics UK discussion LTE_unlic-Core
=> Noted

9.12.3 Other operation on Frame structure type 3

R2-1708484 Multiple starting and ending positions in a subframe for UL and DL Nokia, Nokia Shanghai Bell discussion Rel-15 LTE_unlic-Core
=> Additional starting and ending positions in a subframe for UL and DL does not seem to have any impacts to MAC. To RRC one needs to add any necessary new parameters once RAN1 has indicated those.

R2-1709356 RAN2 Impact on Multiple Starting and Ending Positions in a Subframe Ericsson discussion Rel-15 LTE_unlic-Core
=> Not treated

R2-1708891 UL partial subframe transmission Huawei, HiSilicon discussion LTE_unlic-Core

=> DRX timer counting is in the unit of subframe as in eLAA. No specification changes are needed.

CBF: Draft LS to RAN1 in R2-1709754 to inform our agreements. (Offline number 543) (Nokia)

9.12.4 Others

9.13 Further NB-IoT enhancements

(NB_IOTenh2-Core; leading WG: RAN1; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-171428)

Time budget: 2 TU

Documents in this agenda item will be handled in a break out session

Some sub-items in 9.13 and 9.14 may be treated jointly.

Incoming LS

R2-1707612 LS on NB-IoT small cell (R1-1709780; contact: Ericsson) RAN1 LS in Rel-15 NB_IOTenh2-Core To:RAN4 Cc:RAN2

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⇒ **noted**

R2-1707615 LS on early data transmission in MTC and NB-IoT in Rel-15 (R1-1709835; contact: Ericsson) RAN1 LS in Rel-15 LTE_eMTC4-Core, NB_IOTenh2-Core To:RAN2

⇒ **take into account if applicable**

⇒ **noted**

General

R2-1708310 Consideration on FeNB-IoT impact on RAN2 specifications Huawei, HiSilicon, Neul discussion Rel-15 NB_IOTenh2-Core

Above tdoc moved from 9.13.9

- Chair think that CRs for December need to be quite stable. We may e.g. need to be backwards compatible towards those.
- Huawei think that in Dec we could have TEI14 CRs, but see problems for ASN.1 CRs.
- Chair asks rapporteurs to coordinate CR development to reduce the number of CRs. DraftCR and TPs can be provided by all companies but CRs should be coordinated by the rapporteur companies.

⇒ **noted**

R2-1709543 WF on power consumption reduction for NB-IoT VEOLIA discussion

⇒ **noted**

9.13.1 Early Data Transmission

Treated with 9.14.2. All tdocs moved there.

Use case scenario? Objective to avoid MSG5? Early data transmission for UL or also for DL, MSG3 flexible TB size, MSG1 indication of Data volume, Start state of the UE Idle or also Connected? CIOT CP / UP solutions? AS security?0 2 3 RRC messages, state transition as earlier or staying in Idle mode, DL with paging? With RAR? In MSG4?

9.13.2 System Acquisition Enhancements

Treated with 9.14.3. All tdocs moved there

For stationary UEs?, for UEs that enter a new cell? Skip reading SI? Optimized transmission? Area concept? Stored SI?

9.13.3 Relaxed Monitoring for cell reselection

Treated with 8.11.1. All tdocs moved there

9.13.4 Semi-Persistent Scheduling

File transfer, media transmission, m2m regular reports

R2-1708235 UL semi-persistent scheduling Qualcomm Incorporated discussion Rel-15 NB_IOTenh2-Core

UNDERSTANDING:

A) Proposal: SPS for M2M long-time regular transmissions allowing UE to be in Idle/PSM mode (at least between the transmissions), either for stationary UEs, or with R1 solutions for Timing advance. This kind of SPS can remove the need for MSG1 and MSG2 in the Access.

- LG think that if TA is needed there can still be gain, i.e. the UE performs MSG1/MSG2 to get the TA, and can then do Subsequent transmission based on SPS.

R2-1708639 Further discussion on SPS for NB-IoT Ericsson discussion Rel-15 NB_IOTenh2-Core

B) Proposal: Support NB-IoT SPS for DL transmission of large files in Connected mode, e.g. for firmware updates. This kind of SPS can reduce PDCCH overhead, when a file is transmitted in multiple TBs.

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C) Proposal: Consider UL SPS support with *skipUplink* for NB-IoT, to be used as a "scheduling request" + BSR channel.

Variation) Common or Dedicated UL SPS

- LG wonders if SPS is dedicated of shared. Ericsson confirms this is dedicated. LG think we should consider also common resources.
- QC think that file transfer is rare.

R2-1708852 Consideration on SPS for NB-IoT LG Electronics Inc. discussion Rel-15 NB_IOTenh2-Core

- LG would be ok to not restrict to Connected mode.

D) Proposal: SPS for media type applications or similar (in connected mode), where the SPS resource is used during limited time. This kind of SPS can reduce PDCCH overhead and SR overhead (e.g. by RACH).

R2-1708302 Semi-Persistent Scheduling in NB-IoT Huawei, HiSilicon, Neul discussion Rel-15 NB_IOTenh2-Core

E) Proposal: SPS for SC-PTM in IDLE mode, to reduce PDCCH load for SC-MTCH, and SC-MCCH.

R2-1709539 NB-IoT Semi Persistent Scheduling Scope MediaTek Beijing Inc. discussion

- Same proposal as QC

⇒ **Noted**

R2-1708370 Consideration on SPS in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

- Main message is to be a bit careful, as SPS may also have negative consequences and the complexity may be significant.

⇒ **Noted**

DISCUSSION on the papers above:

A) Proposal: SPS for M2M long-time regular transmissions allowing UE to be in Idle/PSM mode (at least between the transmissions), either for stationary UEs, or with R1 solutions for Timing advance. This kind of SPS can remove the need for MSG1 and MSG2 in the Access.
B) Proposal: Support NB-IoT SPS for DL transmission of large files in Connected mode, e.g. for firmware updates. This kind of SPS can reduce PDCCH overhead, when a file is transmitted in multiple TBs
C) Proposal: Consider UL SPS support with *skipUplink* for NB-IoT, to be used as a "scheduling request" + BSR channel.
D) Proposal: SPS for media type applications or similar (in connected mode), where the SPS resource is used during limited time. This kind of SPS can reduce PDCCH overhead and SR overhead (e.g. by RACH).
E) Proposal: SPS for SC-PTM in IDLE mode, to reduce PDCCH load for SC-MTCH, and SC-MCCH.

A, C, D Variation) Common or Dedicated UL SPS

- Chair think we should try do decide the scope / reduce the options at the next meeting.
- LG think we need to decide; whether to have SPS or not, UL/DL, Idle/Connected.
- Intel are not sure SPS can reduce the power consumption.
- Qualcomm think we need to look at the use case too.
- QC think this is not needed for December. Veolia disagrees and think this is part of the power saving features,

R2-1709725 Summary of offline discussion 313 on scope of the email discussion on SPS Huawei, HiSilicon, Neul

⇒ **We set the scope of the email discussion as proposed here.**

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⇒ **noted**

✉ **[99#42][NB-IoT] Email discussion on SPS options (Huawei)**
Objective to become better familiar with pros/cons, etc, to be able to make decisions at next meeting. Discuss Use case, Benefits, Impacts, Implications.

9.13.5 RRC Connection Release Enhancements

Release by timer? Reduced overhead release signalling? Release without waiting time? Used with early data transmission or not? Enhanced spec of RAI?

R2-1708249 NB-IOT UE Autonomous Release MediaTek Inc. discussion Rel-15

- Proposal: Timer triggered RRC release (without NAS recovery), with the information originally carried by RRC release message delivered to UE via RRC setup, resume, reconfiguration message.
- ZTE think that also RRC reconfiguration can be used. ZTE think that the existing timer can be used. LG agrees. Huawei think we would need another timer. Ericsson think that the criteria for such timer would need to be re-evaluated.
- LG think that NAS recovery or not can be left for UE implementation.
- Ericsson are not sure that resume ID can be provided in the setup.
- Nokia wonders when the timer is started. Mediatek think that this started at last data transmissions.
- QC wonders what happens at timer expiry with L2 and possibly pending data. Mediatek think this would not happen, and buffers would be empty. Both sides keep the timer so eNB should know the time limit for DL transmissions. QC think that interaction with L2 timers need to be considered.

⇒ **Noted**

R2-1708279 Quick RRC connection release Ericsson discussion Rel-15 NB_IOTenh2-Core

- Proposal: Go to Idle based on UL HARQ-ACK feedback (instead of waiting 10s), requires a new indication in the DL (e.g. by PDCCH/DCI).

⇒ **Noted**

R2-1709161 Quick release of RRC connection for NB-IoT LG Electronics Inc. discussion Rel-15 36.321 NB_IOTenh2-Core

- Proposal is: In Rel-15, for NB-IoT, if the network doesn't set Poll bit in the RLC PDU containing the RRCConnectionRelease message, the UE performs the RRC Connection Release related actions immediately after the UE receives the RRCConnectionRelease message. (No wait for 10s). State mismatch can be resolved by the current RRC inact timer.
- ZTE think we could also use RLC-UM. LG think that using RLC-AM is a smaller change.
- QC wonders if the UE transmits HARQ feedback? LG think that HARQ feedback don't need to be sent.

⇒ **noted**

R2-1708303 Quick RRC Release Huawei, HiSilicon, Neul discussion Rel-15 NB_IOTenh2-Core

- Proposal: RAN2 to agree to remove the need for RLC ACK and rely on the HARQ ACK, by using a MAC CE to trigger the RRC connection release and to skip the 10s wait.
- LG wonders if the intention is to replace RRC release. Huawei confirms, but only when the network have no information to transmit,

⇒ **noted**

R2-1708371 Consideration on further enhancement of quick release of RRC connection in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

- ZTE think RLC UM can be used for RRC connection release

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- Proposal: RLC UM can be used for RRC connection release.

⇒ **Noted**

R2-1708620 NB-IoT RRC connection release enhancements Qualcomm Incorporated discussion Rel-15 NB_IOTenh2-Core

- Proposal: UE go to Idle based on DCI indication, where the indication can be ACKed in the UL (either by scheduled ACK or PRACH)

⇒ **noted**

✉ **[99#43][NB-IoT] Email discussion on RRC Connection release (Mediatek)**
Objective to iron out the character of the proposals on the table, to be able to take well informed decisions at next meeting

R2-1709376 RRC connection release enhancements Nokia discussion Rel-15 NB_IOTenh2-Core
R2-1709166 Reliable use of DataInactivityTimer LG Electronics Inc. discussion Rel-15 36.321 NB_IOTenh2-Core
R2-1708304 Introduction of quick RRC Connection Release for NB-IoT in 36.321 Huawei, HiSilicon draftCR Rel-15 36.321 14.3.0 NB_IOTenh2-Core B
R2-1708305 Introduction of quick RRC Connection Release for NB-IoT in 36.331 Huawei, HiSilicon draftCR Rel-15 36.331 14.3.0 NB_IOTenh2-Core B

Above 4 tdocs not treated

9.13.6 UE differentiation

For configuration of SPS? For configuration of Idle transition time, C-DRX? Stationary indication? Stored in MME? Configuration parameters or typical traffic description / power consumption requirements etc?

R2-1708309 UE differentiation Huawei, HiSilicon, Neul discussion Rel-15 NB_IOTenh2-Core

- Huawei think that the objective is to be able to do smart scheduling.
- Chair wonders what is smart scheduling. Huawei think it could be SPS.
- The MME provides this information to the eNB, before MSG4. Ericsson think that the current information is just based on subscription but can be extended.
- LG think that SA2 and RAN3 should decide the scope. QC think this is not impacting RAN2.

⇒ **Noted**

R2-1708999 NB-IOT UE Differentiation MediaTek Inc. discussion

- The purpose to control when to go to Idle and C-DRX
- The UE provides the information to the eNB, and then the eNB and MME makes sure this is available at the proper time.
- Nokia agree that the RAN2 scope should be the UE information provided to the eNB.
- Ericsson would not like the UE to suggest values to the network.
- Huawei think the main point is that the MME gets and stores this information.
- Veolia think such mechanism should be about UE constraints (not only static information).

⇒ **Noted**

R2-1709480 Way Forward on UE Differentiation VEOLIA discussion

⇒ **Noted**

DISCUSSION

- Can discuss in RAN2, what information is beneficial for the eNB w.r.t. Uu operation.
- Can discuss in RAN2, how the information becomes available in the network, e.g. for non-static information.
- Ericsson think all information is static. Blackberry point out that there are already mechanisms. Veolia point out that the tdoc was mostly for static information. SW has

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concerns on how the UE can provide values, SW think that it is difficult to control what the application provides.

✉ **[99#44][NB-IoT] Email discussion on UE differentiation (Huawei)**
Focus on what information is beneficial for the eNB w.r.t. Uu operation, can also discuss how the information becomes available in the network, e.g. for non-static information, if any.

R2-1708373 Consideration on UE differentiation in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

R2-1708287 UE differentiation in NB-IoT Ericsson discussion Rel-15 NB_IOTenh2-Core

Above 2 tdocs not treated

9.13.7 Small Cell Support

CSG support? In Idle only? Anything else?

R2-1708286 Small cell support in NB-IoT Ericsson discussion Rel-15 NB_IOTenh2-Core

- ZTE think it could be premature to decide on CSG.
- Chair think there is strong majority to not have CSG, but if clear operator requirements emerges we could revisit this topic.
- MTK don't like to have CSG. LG are also OK to not support CSG. Nokia agrees and think we should send a LS at least to RAN3.

⇒ **We do not support CSG for NB-IoT in Rel-15**

R2-1709723 Draft LS to R3, R4 (cc R1) on CSG support in NB-IoT (Nokia)

⇒ **Approved, final version in R2-1709705**

R2-1708356 Consideration on supporting small cell in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

R2-1709278 Cell reselection with CSG cell in NB-IoT LG Electronics Inc. discussion Rel-15 LTE_eMTC4-Core

R2-1708364 Consideration on supporting CSG functionality in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

R2-1709277 Detection of CSG cells in connected mode LG Electronics Inc. discussion Rel-15 LTE_eMTC4-Core

R2-1709557 Modifications on 36.304 for supporting CSG in UE idle mode procedures in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

Above 5 tdocs not treated

9.13.8 TDD

R2-1709417 Study of Impacts on Timers due to TDD support Ericsson discussion Rel-15

R2-1709418 Study of Paging, SI Acquisition and SIB Scheduling impacts due to TDD Ericsson discussion Rel-15

R2-1709421 Study of TDD NPRACH and RA-RNTI Ericsson discussion Rel-15

R2-1708374 Consideration on TDD support in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

Above 4 tdocs not treated

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9.13.9 Other

E.g. Support for RLC-UM, Wake-Up Signal, Support for physical layer SR, Measurement Accuracy Enhancements, NPRACH reliability, NPRACH range, other

Support for RLC-UM

R2-1708283 RLC UM for NB-IoT Ericsson discussion Rel-15 NB_IOTenh2-Core

P2:

- Huawei support but think this is not a new SRB
- LG think this is a strange configuration and think this has impact on PDCP etc.
- Ericsson think there could be power saving.
- Chair think the main gain is for the Status Report for the very last message, if SR prohibit is used and eNB schedules SR with other transmissions in the DL. Huawei point out that if we have waiting times, we need separate transmissions in any case.
- QC think that NAS messages need high reliability.

⇒ **Support RLC UM for NB-IoT DRBs.**

⇒ **FFS if to Support RLC UM for NB-IoT SRBs**

R2-1708851 Supporting RLC UM for NB-IoT LG Electronics Inc. discussion Rel-15 NB_IOTenh2-Core

Measurement Accuracy Enhancements

R2-1708280 Measurement accuracy improvements Ericsson discussion Rel-15 NB_IOTenh2-Core

Wake Up Signal or similar

R2-1708284 NB-IoT power consumption reduction for paging and connected-mode DRX Ericsson discussion Rel-15 NB_IOTenh2-Core

R2-1708301 Power saving signal or channel in NB-IoT Huawei, HiSilicon, Neul discussion Rel-15 NB_IOTenh2-Core

R2-1708757 Consideration for wake-up signaling in NB-IoT LG Electronics Mobile Research discussion NB_IOTenh2-Core

Support for Phy Layer SR

R2-1708640 NB-IoT PHY Scheduling Request Ericsson discussion Rel-15 NB_IOTenh2-Core

NPRACH enhancements

R2-1709491 NPRACH reliability and range enhancement for NB-IoT Ericsson discussion Rel-15

Other

R2-1708375 Consideration on UE power consumption reduction in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

R2-1709456 Enhanced RRC Connection Re-establishment in NB-IoT LG Electronics Inc. discussion Rel-15 NB_IOTenh2-Core

R2-1709312 Access barring for CE level in NB-IOT LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

Above 10 tdocs not treated

9.14 Even further enhanced MTC for LTE

(LTE_eMTC4-Core; leading WG: RAN1; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-171427)

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Time budget: 2 TU

Documents in this agenda item will be handled in a break out session

9.14.1 Organisational

Including incoming LSs, rapporteur inputs, running CRs

R2-1707614 LS on System acquisition time reduction for Rel-15 LTE MTC (R1-1709834; contact: Ericsson) RAN1 LS in Rel-15 LTE_eMTC4-Core To:RAN2, RAN4

=> Noted

9.14.2 Early data transmission

Note that documents in agenda item 9.13.1 are merged with the documents in this agenda item.

Use case scenarios? Early data transmission for UL or also for DL? Flexible TB size for Msg3? Indication of Data volume in Msg1? Early data transmission for CIOT CP and/or UP solutions? AS security? Early data transmission in DL via paging, RAR or RRC Connection Setup/Resume? State transition to connected after early data transmission?

R2-1708447 UL small data transmission use cases and requirements VEOLIA discussion

The Tdoc above moved from 9.13.1

- Huawei wonders about the size and frequency of the report in the UL. The requirement for the packet size may be large for NB-IoT. Veolia would like to encourage companies to provide simulations showing benefits with early data transmission w r t UE power consumption depending on different use cases (size, frequency... as done in R2-1708628). This would also be beneficial to be done for other power consumption reduction improvements from Veolia's point of view.

R2-1708239 UL Early data transmission Qualcomm Incorporated discussion Rel-15 LTE_eMTC4-Core

R2-1708240 DL Early data transmission Qualcomm Incorporated discussion Rel-15 LTE_eMTC4-Core

- Intel would like to clarify the motivation thinking that it is to send early data in Msg3. Intel thinks that it would be good to clarify whether the UE comes from idle mode. QC assumes that the UE is coming from the idle mode. LG would like to focus on the UP solution, but other solutions are also fine. LG wonders if the WID scope includes sending data not in Msg3. The chair explains that this is not within the scope.
- Nokia wants to check it with RAN1 regarding the TBS limitations.
- MediaTek proposes to leave the state transmission discussion for now.
- Ericsson thinks Msg4 would be beneficial for DL early data transmission.
- QC explains the cases for DL transmission, e.g. Msg4 after Msg3 or as part of paging message. These cases are isolated. Intel has a concern regarding the impact on the paging load.
- LG has a concern to send DL data with the paging message. If the data is transmitted in Msg2 this will consume network resources. LG supports the Msg4 option. ZTE thinks that for DL data Msg4 is the baseline.
- MediaTek thinks DL data has less priority compared to the UL case. If Msg2 is used the NW needs to reserve a preamble for the UE. MediaTek supports to send the DL data in Msg4.
- Intel thinks sending DL data in Msg2 has big impact.
- Ericsson agrees with Intel and MediaTek. There may no point in sending the data early in DL if it is for e.g. firmware upgrade.

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Agreements
We intend to support early UL data transmission in Msg3 for control plane and user plane CIoT EPS optimisation.

We intend to support early DL data transmission in Msg4 for control plane and user plane CIoT EPS optimisation.

R2-1709194 Early data transmission discussion for eFeMTC and FeNB-IoT Intel Corporation discussion Rel-15 LTE_eMTC4-Core

R2-1708628 Early Data Transmission for efeMTC UEs Ericsson discussion Rel-15 LTE_eMTC4-Core

- LG wonders whether the intention is to support early data transmission only for the UP solution.
- Intel wonders whether the information sent in Msg5 is required earlier of the data is sent in Msg3. Huawei thinks that such information can be provided in Msg3.
- Ericsson confirms that CP solution was not precluded. The concern was the message sizes and information required before Msg5 is received.
- Intel would like check with the CT groups to confirm that the information in Msg5 can be provided in Msg3. MediaTek thinks that it is only S-TMSI that is required.
- LG would like to find out the maximum size of Msg3. MediaTek thinks it is OK to discuss in the meantime by making assumptions. QC thinks instead of sending an LS to the RAN1 and ask for the maximum size we should first evaluate the maximum possible size from RAN2 standpoint, e.g. headers.
- Nokia thinks it would still be beneficial to ask RAN1 about the message size. Veolia would like RAN2 to evaluate first. ZTE thinks it is better if RAN1 provides first what is possible w r t message size.
- ZTE thinks there is no need to have RRC release, Msg5 etc. in some scenarios.
- MediaTek proposes to send an LS to RAN1 and mention the use case we have discussed as one example. Huawei supports.
- Intel suggests an email discussion will help to structure the discussion. MediaTek suggests discussing RRC signalling, e.g. whether there is any RRC signalling or just data, where control information is sent and how. LG has a concern if data is transmitted without connection is established.
- QC suggests discussing the indication of UE's intention of early data, contents of Msg3, Msg4, Msg5, how to identify a UE. Ericsson would like to add content of Msg2. LG wants to discuss how to control access for data transmission and how to avoid impact on legacy UE transmission. MediaTek thinks we can also discuss security.
- Intel would like the ask RAN1 about the limitations w r t grants in Msg2.
- Intel suggests to send an LS on maximum message size.
- We will not send an LS but discuss the indication in Msg1 and the potential impact as part of the email discussion.

Agreements
Early data transmission feature is considered when AS security was not established for only transmitting data using CP.

Early data transmission feature is considered when AS security was established for transmitting data using CP and/or UP.

✉ **[99#45][NB-IoT/MTC] Email discussion on the detailed aspects of early data transmission (Qualcomm)**

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Intended outcome: To address the following but not limited to:
RRC signalling, e.g. whether there is any RRC signalling, at which point control information is sent and how. Security aspects, indication of UE's intention of early data, contents of Msg2, Msg3, Msg4, Msg5, how to identify a UE etc.

R2-1708300 Early data transmission for the CP solution Huawei, HiSilicon, Neul discussion Rel-15 NB_IOTenh2-Core

The Tdoc above moved from 9.13.1

R2-1709335 Enhanced UP solution for early data transmission in MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

R2-1708630 Bearer Setup and Security Considerations for Early Data in MTC Ericsson discussion Rel-15 LTE_eMTC4-Core

R2-1708380 Consideration on early data transmission in eFeMTC ZTE Wistron Telecom AB discussion Rel-15 LTE_eMTC4-Core

R2-1708231 Expanded PRACH search space for EDT requests Sierra Wireless, S.A. discussion Rel-15

R2-1708722 Initial discussion on RAN2-led objectives for eFeMTC Kyocera discussion

R2-1708855 Fast uplink transmission for MTC LG Electronics Inc. discussion Rel-15 LTE_eMTC4-Core

R2-1709307 Early data transmission for User plane CIoT optimisation in feMTC LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709309 Early data transmission for Control plane CIoT optimisation in feMTC LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709333 General discussion on early data transmission for MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

R2-1709334 Early data transmission on dedicated resource for Rel-15 MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

R2-1709458 Early Data Transmission Failure Handling in MTC LG Electronics Inc. discussion Rel-15 LTE_eMTC4-Core

The Tdocs below moved from 9.13.1

R2-1707805 Consideration on early data transmission in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

R2-1708233 UL Early data transmission Qualcomm Incorporated discussion Rel-15 NB_IOTenh2-Core

R2-1708234 DL Early data transmission Qualcomm Incorporated discussion Rel-15 NB_IOTenh2-Core

R2-1708629 Early Data Transmission for feNB-IoT UEs Ericsson discussion Rel-15 NB_IOTenh2-Core

R2-1708631 Bearer Setup and Security Considerations for Early Data in NB-IoT Ericsson discussion Rel-15 NB_IOTenh2-Core

R2-1708854 Fast uplink transmission for NB-IoT LG Electronics Inc. discussion Rel-15 NB_IOTenh2-Core

R2-1708998 NB-IOT Early Data Transmission MediaTek Inc. discussion

R2-1709308 Early data transmission for Control plane CIoT optimisation in NB-IOT LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709310 Early data transmission for User plane CIoT optimisation in NB-IOT LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709457 Early Data Transmission Failure Handling in NB-IoT LG Electronics Inc. discussion Rel-15 NB_IOTenh2-Core

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9.14.3 System acquisition time enhancements

Note that documents in agenda item 9.13.2 are merged with the documents in this agenda item.

For stationary UEs? Skip reading MIB, SIB1-BR, SI messages? Optimized transmission? Area concept? Stored SI?

R2-1709336 Reduced system information acquisition time for MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

R2-1708248 Skipping MIB-NB Acquisition for NB-IOT UE MediaTek Inc. discussion Rel-15

The Tdoc above moved from 9.13.2

- ZTE is not sure about the RAN2 impact of Proposal 2. Intel supports repetitions on time domain only. MediaTek assumes this is a RAN1 discussion and there is no need to discuss here. Ericsson and Intel commented that proposal 2 is not clear.
- MediaTek wonders whether Proposal 3 is for both mobile and static UEs.
- MediaTek comments that this is already implicitly possible, but does it also apply to smart meters sleeping for long periods?
- QC and Intel would like to understand what Proposal 3 would mean considering that system information is usually different across cells.
- QC and Intel would like to capture something that specifies the UE behaviour regarding Proposal 5. Not necessarily along the lines that were captured in the LS sent to RAN4.
- QC agrees with MediaTek that this is to address a corner case where once in a while system information change happens.

=> Regarding accumulation across SIB1-BR/SI modification periods; we intend to capture what has been provided in the LS to RAN4 in the next meeting and send an LS to RAN4 for information.

R2-1708625 Reduced System Acquisition Time for efeMTC UEs Ericsson discussion Rel-15 LTE_eMTC4-Core

- ZTE wonders this refers to an absolute time or a relative value. Gemalto wonders how this would work for a UE sleeping long periods that wakes up and finds out that there has been changes. SW explains that the UE would know how long such information is valid and behave accordingly.
- Intel wonders why this would be beneficial on top of the existing mechanisms. SW thinks with this the UE can avoid acquiring SIB1-BR if there is an indication in the MIB. SW thinks that this can coexist with the indication in paging message.
- SW explains that the intention is to save power consumption for devices configured with rather short DRX/eDRX cycles.
- Intel mentioned that this was discussed before within the context of NB-IoT. SW thinks this is not exactly the same mechanism discussed at that time, it is not incremental.
- Intel thinks the use case is still not clear. SW explains how this is supposed to work. ZTE has a concern that the UE may miss the notification.
- We will discuss proposal 2 in the next meeting with companies bringing contributions explaining the use cases and the benefits clearly.
- Regarding proposal 3, Intel wonders were the benefits are. Ericson explains that the UE can avoid reading SIB14 if access barring is not enabled. MediaTek thinks the benefits are still not clear.
- Regarding Proposal 4; ZTE thinks that this may not help UEs not aware of the update. SW has a concern on system resources. Huawei wonders about the benefits in general.
- Intel points at the email discussion in RAN2 on similar topics, i.e. R2-156345, R2-152161, R2-153277.

✉ **[99#46][MTC] Email discussion on identifying the use cases for skipping SIB1-BR (Sierra Wireless)**

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R2-1708627 DRAFT LS reply on system acquisition time reduction for Rel-15 MTC Ericsson LS out Rel-15 LTE_eMTC4-Core RAN1, RAN4

R2-1709283 Optimization of SI acquisition in MTC LG Electronics Inc. discussion Rel-15 LTE_eMTC4-Core

R2-1708381 Consideration on system acquisition time reduction in eFeMTC ZTE Wistron Telecom AB discussion Rel-15 LTE_eMTC4-Core

R2-1708232 SIB validity indication in MIB Sierra Wireless, S.A. discussion Rel-15

R2-1709337 Skip system information reading for MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

R2-1708379 Consideration on system acquisition time reduction in FeNB-IoT ZTE Wistron Telecom AB discussion Rel-15 NB_IOTenh2-Core

The Tdoc above moved from 9.13.2

R2-1708626 Reduced System Acquisition Time for feNB-IoT UEs Ericsson discussion Rel-15 NB_IOTenh2-Core

The Tdoc above moved from 9.13.2

R2-1709282 Optimization of SI acquisition in NB-IoT LG Electronics Inc. discussion Rel-15 LTE_eMTC4-Core

The Tdoc above moved from 9.13.2

9.14.4 Relaxed monitoring for cell reselection

Note that documents in this agenda item are merged with the documents in agenda item 9.13.3.

9.14.5 Access/load control of idle mode UEs

Is CE-level based access class barring beneficial? A particular CE level or a CE level and above is barred? Signalling aspects? UE behaviour when a certain CE level is barred. Indicators in MIB? LS reply?

R2-1709340 Improvement of load control in Rel-15 MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

R2-1709044 CE level based access barring and load control for eFeMTC and FeNB-IoT Intel Corporation discussion LTE_eMTC4-Core

- LG supports CE level access barring. LG prefers to use SIB2 or SIB14. Huawei wonders if such mechanism is fair from devices standpoint since UEs in different CE level may be discriminated. Ericsson support CE level barring and would like to provide it in SIB14. QC wonders whether the intention is to extend both ACB and EAB.
- ZTE agrees with Ericsson and LG and thinks that SIB14 is better to provide such information.
- Fujitsu supports the Huawei view. QC mentions that CE based authorization already introduced unfairness in that sense.
- Huawei suggests consulting SA1 if we would like to introduce this mechanism. QC does not see any need to do that. LG supports QC.
- Kyocera supports Huawei's view.
- MediaTek thinks we can consider a lower resolution, e.g. CE mode based

=> We will continue the discussion in the next meeting. Companies will check the concerns brought up regarding fairness before the next meeting.

R2-1708637 Improved Idle Mode Load control for efeMTC UEs Ericsson discussion Rel-15 LTE_eMTC4-Core

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R2-1708365	Consideration on access control in eFeMTC Rel-15 LTE_eMTC4-Core	ZTE Wistron Telecom AB		discussion
R2-1709311	Access barring for CE level in feMTC LTE_5GCN_connect-Core	LG Electronics Inc.	discussion	Rel-15
R2-1708860	Improved Access and load control of idle mode UEs NR_newRAT-Core	Fujitsu	discussion	Rel-15
R2-1709312	Access barring for CE level in NB-IoT NB_IOTenh2-Core	LG Electronics Inc.	discussion	Rel-15

The Tdoc above moved from 9.13.9

9.14.6 Uplink HARQ-ACK feedback

Is UL HARQ-ACK feedback beneficial for early termination signalling? FDD/TDD and/or HDD?

R2-1709045	On the need for UL HARQ feedback	Intel Corporation	discussion	LTE_eMTC4-Core

- QC supports UL HARQ ACK feedback. QC wonders this requires the UE to be full duplex. Intel explains that this is not needed, but this will require gaps.
- LG also supports UL HARQ ACK feedback. ZTE also supports.
- Intel thinks that if gaps are not introduced for HDD, there is not much benefit if the indication is sent after the repetitions are done.
- MediaTek consider this beneficial especially for UEs in really bad coverage.
- If agreed to be introduced in RAN1, RAN2 needs to this capability signalling and signalling for activation and deactivation.

Agreements
The support for UL HARQ ACK feedback for early termination signalling (ETS) is up to RAN1 to decide.

UL HARQ ACK feedback is beneficial with respect to UE power consumption from RAN2 standpoint.

R2-1708632	Uplink HARQ-ACK feedback for efeMTC UEs LTE_eMTC4-Core	Ericsson	discussion	Rel-15
R2-1709140	RA enhancement using HARQ feedback 36.321 LTE_eMTC4-Core	LG Electronics Inc.	discussion	Rel-15
R2-1709141	DRX enhancement using HARQ feedback 36.321 LTE_eMTC4-Core	LG Electronics Inc.	discussion	Rel-15

9.14.7 Increased PDSCH spectral efficiency

Capability reporting? Signalling to enable/disable?

R2-1708634	Increased PDSCH spectral efficiency	Ericsson	discussion	Rel-15		LTE_eMTC4-Core
R2-1708635	Increased PDSCH spectral efficiency LTE_eMTC4-Core 3007 B	Ericsson	CR	Rel-15	36.331	14.3.0
R2-1709341	Increased PDSCH spectral efficiency for Rel-15 MTC Rel-15 LTE_eMTC4-Core	Huawei, HiSilicon				discussion

- Intel thinks capability signalling is supported for both BL and non BL UEs. Huawei thinks that there is no need to introduce capability signalling for non-BL UEs.

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Agreements
Capability signalling is introduced to indicate support for 64QAM for BL/CE UEs assuming that RAN1 has already agreed this.

9.14.8 Increased PUSCH spectral efficiency

R2-1709342 Increased PUSCH spectral efficiency for Rel-15 MTC Huawei, HiSilicon discussion Rel-15 LTE_eMTC4-Core

R2-1708636 Increased PUSCH spectral efficiency Ericsson discussion Rel-15 LTE_eMTC4-Core

- QC would like to clarify what Huawei proposals mean. Intel does not support the proposals on switching between eMTC and NB-IoT. SW supports increased PUSCH spectral efficiency. Ericsson also supports increased PUSCH spectral efficiency. ZTE does not support proposal 1 from Huawei. SW thinks it is not possible for the UE to handover to another RAT when in connected mode.
- MediaTek thinks there is no point in discussing whether this should be introduced or not from RAN2 standpoint since it is up to RAN1 to decide.

9.14.9 Other

Including higher UE velocity, lower UE power class, wake-up signaling, CRS muting etc.

10 WI: New Radio (NR) Access Technology

(NR_newRAT-Core; leading WG: RAN1; REL-15; started: Mar. 17; target: Jun. 18: WID: RP-171485)

10.1 Organisational

Incoming LSs, work plan, status from other groups, etc.

Incoming LSs to RAN2

R2-1707603 Liaison Statement from NGMN Alliance to 3GPP on Test Results of Technology Building Blocks phase of the Trial and Testing Initiative (contact: KT Corp, Telecom Italia NGMN Alliance LS in

=> Noted

R2-1707618 LS on NR UL SPS / UL transmission without UL grant (R1-1711686; contact: NTT DOCOMO) RAN1 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707619 LS on Single UL transmission (R1-1711878; contact: NTT DOCOMO) RAN1 LS in Rel-15 FS_NR_newRAT

=> Noted

R2-1707620 LS on Beam Aspects of NR RACH (R1-1711880; contact: Huawei) RAN1 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707621 Reply LS response on reading time index indication for RRM measurements (R1-1711966; contact: Intel) RAN1 LS in Rel-15 NR_newRAT-Core

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=> Noted

R2-1707622 Reply LS response on NR basic handover (R1-1711987; contact: Samsung) RAN1 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707624 LS on Bandwidth Part Operation in NR (R1-1711998; contact: MediaTek) RAN1 LS in Rel-15 NR_newRAT-Core

- LG ask if RAN2 need to consider support of multiple active BWP in phase 1.
- Vivo think the spec will need to possibility to support multiple activation of more than one BWP. MediaTek think we need a framework to support more than one.
- Ericsson think the agreement is clear than single BWP is the priority, but we don't know what RAN1 will do for multiple BWPs.
- ZTE think this will impact many things including RRM.

=> Noted

R2-1707626 LS on support of multi-TRP transmission in NR (R1-1712000; contact: Intel) RAN1 LS in Rel-15 NR_newRAT-Core

- ZTE wonder if RAN1 really want to support all these different options.
- Intel think RAN1 is considering some cases but may not be considering all possible combinations.
- Huawei think that RAN1 is considering to support all those scenarios.
- LG think that TRPs should not be visible in the specification, but just see multiple PDCCHs. ZTE agrees with this comment.

=> Offline discussion to see is RAN2 can respond (e.g. explain our desire that TRP is not visible in the spec). Draft LS in R2-1709815 (ZTE, Offline discussion #19).

R2-1709815 [Draft] Reply LS on support of multi-TRP transmission in NR ZTE LS out

=> Will not be sent

=> We will wait for further input from RAN1 before discussing this in RAN2

R2-1707627 LS on NR initial access and mobility (R1-1712001; contact: NTT DOCOMO) RAN1 LS in Rel-15 NR_newRAT-Core

- Vivo ask if the conclusions for idle or connected or both. DOCOMO think we will need to discuss this based on contributions.

=> Noted

R2-1707628 Reply LS on PDCCH design (R1-1712005; contact: Ericsson & CATT) RAN1 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707629 LS on NR Beam Management (R1-1712007; contact: Qualcomm) RAN1 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707630 LS on HARQ operation (R1-1712008; contact: Nokia) RAN1 LS in Rel-15 NR_newRAT-Core

- Vivo ask how the transmission duration is communicated. Nokia think it is not concluded

=> Noted

R2-1707636 Reply LS on UE measurement capabilities across LTE and NR (R4-1706905; contact: Nokia) RAN4 LS in Rel-15 NR_newRAT-Core

=> Noted

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R2-1707637 Reply LS on the feasibility of DC-related mobility enhancements in NR (R4-1706913; contact: Huawei) RAN4 LS in Rel-15 NR_newRAT-Core

- Ericsson wonder what is the message from RAN4.
- Huawei think the questioned are answered objectively and for the 3rd question we would need to have some more discussion.
- Ericsson think the answer was on feasibility but we also need to consider complexity.
- LG think it is clear that the enhancement would only be feasible in some cases but not all.

=> Noted

R2-1707638 Reply LS on support of supplementary uplink in NR (R4-1706967; contact: CMCC) RAN4 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707639 LS on spectrum utilization (R4-1706974; contact: Vodafone) RAN4 LS in Rel-15 NR_newRAT-Core

- Qualcomm wonder why they sent it , we can of course support it.

=> Noted

R2-1709672 LS on DL & UL channel bandwidth for NR (R4-1706978; contact: Intel) RAN4 LS in Rel-15 FS_NR_newRAT To:RAN1, RAN2

=> Noted

R2-1707645 Reply LS on RAN2 agreements on NR paging (S2-174801; contact: LGE) SA2 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707648 Reply LS on NR Idle Mode procedures (S2-175089; contact: Qualcomm) SA2 LS in Rel-15 5GS_Ph1, LTE_5GCN_connect-Core

- LG ask if allowed and non-allowed area is UE specific. Qualcomm confirm it is UE specific an provided in NAS. LG think RAN will need to properly configure the RAN area.

=> Noted

R2-1707652 LS reply on NAS Reflective QoS (S2-175244; contact: Intel & MediaTek) SA2 LS in Rel-15 NR_newRAT-Core

=> Noted

R2-1707653 Reply LS on RAT restriction in 5GS (S2-174261; contact: Qualcomm) SA2 LS in Rel-15 5GS_Ph1

=> Noted

R2-1707654 LS on NR indication (S2-175270; contact: Qualcomm) SA2 LS in Rel-15 EDCE5

- Vivo wonder why the indication is needed. Vodafone explain that it is to provide the user with some indication. However, wonders what SA3 means with NR.
- DT think the indication could be misleading for the user. Also SA2 have sent some request to GSMA about the need for indications to the user.

=> RAN2 understand that the indication is for the user and not to affect AS operation.
=> Noted.

R2-1709674 Reply LS to RAN2 on Counter Check Procedure and SCG SRB integrity check failure (S3-172077; contact: Nokia) SA3 LS in Rel-15 NR_newRAT-Core To:RAN2

=> Noted

R2-1709675 Reply LS on algorithm selection in E-UTRA-NR Dual Connectivity (S3-172078; contact: Ericsson) SA3 LS in Rel-15 EDCE5 To:RAN2, RAN3, CT1

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- Qualcomm think we asked if we need to do the echo back but they did not answer.
- Qualcomm think CT1 is discussing this this week. And also the NAS based solution has not been submitted into SA3.

=> Noted

R2-1709676 LS on NR security input parameters (S3-172079; contact: Qualcomm) SA3 LS in Rel-15 NR_newRAT To:RAN2 Cc:ETSI SAGE

- Qualcomm think SA3 seem to assume LTE algorithms will be used in NR-PDCP when it is used in eNB.
- Ericsson think the LS statements about bearer space and LCID space is not true.

=> Offline discussion to conclude how to respond (Ericsson, Offline discussion #20)
=> Draft LS in R2-1709817

R2-1709817 [Draft] Reply LS on NR security input parameters Ericsson, LSout

- Qualcomm think if we send this LS then it fixed the DRB space to 5 bits as SA3 will start working on this assumption.

=> Working assumption: The DRB ID space is 5 bits
=> LS to be clarified to explain that DRB ID space is just a working assumption.
=> Revised in R2-1709931

R2-1709931 [Draft] Reply LS on NR security input parameters Ericsson, LSout

=> Approved in R2-1709969

R2-1709677 Response LS on security keys in EN-DC and actions upon DRB IP check failure (S3-172080; contact: Ericsson) SA3 LS in Rel-15 NR_newRAT-Core To:RAN2

=> Draft response in R2-1709818 to answer their question and provide conclusions from what we discuss this meeting. (Ericsson , Offline discussion #21)

R2-1709818 [Draft] Response LS on security keys in EN-DC and actions upon DRB IP check failure Ericsson LSout

=> Revised in R2-1709936

R2-1709936 [Draft] Response LS on security keys in EN-DC and actions upon DRB IP check failure Ericsson LSout

=> Approved in R2-1709982

R2-1709847 LS on RRC parameters for NR (R1-1714969; contact: Ericsson) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2

- New LS in

=> Noted

✉ **[99#22][NR] L1 parameters (Ericsson)**
Start to progress how to capture and structure the L1 parameters in RRC
Intended outcome: First TP on the ASN.1 including L1 parameters
Deadline: Thursday 2017-08-31

✉ **[99#23][NR] L2 Parameters (Huawei)**
Start to progress how to capture and structure the L2 parameters in RRC
Intended outcome: First TP on the ASN.1 including L2 parameters
Deadline: Thursday 2017-08-31

R2-1709861 LS on multiple SSBs within a wideband carrier (R1-1715071; contact: Ericsson) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN2

- MediaTek ask if the different BWPs will be configured with a different cell ID. AT+T think if the PCIs are the same then the UE will know that it doesn't need to measure both.

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- LG think that from RAN2 point of view they should be considered as different cells if they have different PCI.
- Ericsson think it could be configured as 2 measurements objects and then there would be no problem from UE point of view. Also think the use case is needed to be able to answer. E.g. if one if intended to be narrow band UEs and one for other.
- Huawei don't see any impact in RAN2. From UE they will appear as 2 frequencies on which to measure.

=> Ask RAN1 the use case for this so that we are better able to respond
=> Offline discussion to see if there is anything else that we need to ask RAN1.
=> May also include aspects concluded for today's discussion.
=> Reply LS in R2-1709873 (MediaTek, Offline discussion #46)

R2-1709873 Reply LS on multiple SSBs within a wideband carrier MediaTek LS out
=> Approved I R2-1709983

R2-1709863 LS on response to EPC QoS aspects for TSG RAN's lower latency features (R1-1715089; contact: Ericsson, Vodafone) RAN1 LS in Rel-15 EDCE5, New Radio (NR) Access Technology, LTE_HRLLC, LTE_sTTIandPT To:SA2, RAN2 Cc:SA1, CT1, RAN, SA, RAN3
=> Noted

R2-1709885 LS response on spectrum utilization (R1-1715184; contact: Huawei) RAN1 LS in Rel-15 NR_newRAT-Core To:RAN4, RAN2, RAN3
=> Noted

Incoming LSs cc RAN2

R2-1707623 Response LS on Support for fake gNB detection mechanisms (R1-1711997; contact: Nokia) RAN1 LS in Rel-15 NR_newRAT-Core
R2-1707625 LS on power sharing for LTE-NR Dual Connectivity (R1-1711999; contact: Ericsson) RAN1 LS in Rel-15 NR_newRAT-Core
R2-1707631 Reply LS on CSI-RS Design for Beam Management (R1-1712009; contact: NTT DOCOMO) RAN1 LS in Rel-15 NR_newRAT-Core
R2-1707649 Reply LS on the need for EPS Bearer ID knowledge in NG-RAN for (inter-RAT) inter-system handover (S2-175157; contact: NTT DOCOMO) SA2 LS in Rel-15 5GS_Ph1
R2-1707651 Reply to LS on Dual Connectivity with 5GC (S2-175197; contact: Nokia) SA2 LS in Rel-15 5GS_Ph1
R2-1707656 LS on Status Icons related to 5G (S2-175303; contact: MediaTek) SA2 LS in Rel-15 5GS_Ph1, NR_newRAT-Core, LTE_5GCN_connect-Core
=> All above LSs are noted without presentation.

Other

R2-1707772 RAN WG's progress on NR WI in the June AH meeting 2017 NTT DOCOMO, INC. (Rapporteur) discussion
=> Noted

R2-1709568 Draft Reply LS to RAN4 on Spectrum Utilization Huawei, HiSilicon LS out
=> Approved in R2-1709816

Withdrawn

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R2-1709673 Reply LS on Closed Subscriber Group in 5GS (RP-171479; contact: Qualcomm) RAN LS in Rel-15 SMARTER, NR_newRAT To:SA1, RAN2 SA2, SA3, RAN3

10.2 Stage 2 and common UP/CP aspects

For this meeting, proposals to the stage 2 should be submitted with a TP to show the impact to the stage 2 specifications.

10.2.1 Stage 2 TSs and running CR

Latest TS 38.300, TS 37.340 and running CR to 36.300, other rapporteur inputs, anything related to specification methodology. Please submit any new text proposals to the appropriate agenda item.

R2-1707748 Draft TS 38.300 v060 Rapporteur (Nokia) draft TS38.300 0.6.0

=> Endorsed

=> The draft TS (v0.7.0) is endorsed in R2-1709937.

R2-1708080 TS 37.340 v0.2.1 Rapporteur (ZTE Corporation) draft TS37.340 0.2.1

=> Endorsed. v0.3.0 can be provided in R2-1709831

=> The draft TS (v0.4.0) is endorsed in R2-1709939.

Stage 2 corrections

R2-1707690 Text proposal for aligning description of the RRC states Samsung, Nokia, Nokia Shanghai Bell, Intel Corporation discussion

=> Agreed

R2-1707980 NG-RAN Terminology Rapporteur (Nokia) discussion

- ZTE think we do not need to use the terms on our stage 2 specs. They have agreed them for their stage 3
- Nokia was planning to have a single sentence if needed.
- Ericsson suggest that we could just use network in the RRC spec. ZTE think we considered using RAN when this was discussed in plenary and would have impact in 36.331 as well.

=> In our stage 2 specs we intend to continue to use eNB and gNB (except in TPs from RAN3 where they have felt it necessary to be specific).

=> Stage 2 spec rapporteurs are asked to review our terminology and come with a proposal, if required, to the next meeting.

R2-1708690 Proposed corrections to 38.300 mainly on RRC_INACTIVE state Huawei, HiSilicon discussion

- Nokia think the problems are only due to LTE.

=> Offline discussion to try to conclude way forward for updating this terminology.

=> Revised in R2-1709833 (Offline discussion #26)

R2-1709833 Proposed corrections to 38.300 mainly on RRC_INACTIVE state Huawei, HiSilicon discussion

=> In 9.2.2.3 remove the change to CN Tracking Area

=> Agreed with the change above

10.2.2 User Plane

No documents should be submitted to 10.2.2. Please submit to 10.2.2.x.

10.2.2.1 Bearer type harmonisation

Any remaining stage 2 aspects relating to bearer type harmonisation, including confirmation (or otherwise) of working assumption that MCG bearer can be configured with LTE or NR PDCP type, and including FFS points identified in the last meeting.

Maximum 1 tdoc per company

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R2-1709165 PDCP for MCG DRB and SRB Samsung Electronics GmbH discussion

P2

- Ericsson think the reason to NR-PDCP for the DRBs was to avoid switching, which is not a case for the SRBs. And for LTE-PDCP there is nothing new needed to support the split and duplicate SRB. ZTE support Ericsson's view and see more work if we use NR-PDCP. MediaTek also share the view of Ericsson and ZTE.
- Huawei see some benefit to use NR-PDCP. As it would only need to be specified in a single spec and avoid impact to LTE spec.
- OPPO wonder what would be used for the other options.
- Intel agree with Huawei to go for NR-PDCP for split bearer. To avoid impact to LTE PDCP to support uplink duplication.
- Nokia also see benefit to use NR-PDCP. LG also support. CATT also support and think the functionality is already in the NR-PDCP. DCOOMO also support NR-PDCP and would like to align DRB and SRB. Lenovo also support proposal 2. Qualcomm also.
- Ericsson think that we have complexity of performing handover to switch from LTE to NR PDCP. And would be the benefit of the handover. Only gain is to not introduce the functionality for LTE.
- IDC think the handover to reconfigure is not something that will happen often and hence support proposal 2.
- Sony also support proposal 2.
- CMCC would prefer to use LTE PDCP as it could have impact on existing eNB. Huawei think eNB will anyway have to support NT PDCP for split bearer.
- Vivo ask if LTE MAC will support the duplication.

P4

- Huawei think the network should be able to use NR-PDCP at initial connection setup. Network could blindly detect the PDCP version being used.
- LG think the simplest approach is to agree proposal 4 and avoid discussion how to detect the UEs capability early.
- Ericsson think early setup should be discussed.
- Vodafone would prefer a single option at connection establishment.
- ZTE can support P4 as a compromise.
- Intel think that P4 is agreeable as there are several mechanisms available by eNB implementation that would allow reconfiguration.
- Nokia wonder if an indication of the CN in msg 3 could be used, at least for option 7.

Agreements for EN-DC

1: Working assumption of the last meeting is confirmed as an agreement: For MCG bearer, either LTE or NR PDCP can be used, configurable by the network.

1a EN-DC capable UE without EN-DC operation configured can be configured with NR PDCP version for SRBs and DRBs.

2: NR-PDCP is used for 'MCG split or duplicate SRB'.

3: Non split SRB1 and 2 can be transmitted over either LTE-PDCP or NR-PDCP, which is configurable by network (at least after initial connection establishment).

FFS whether SRB1 and SRB2 need to be configured with the same PDCP type (to be concluded in stage 3).

4: LTE-PDCP is used for SRB1 at the initial connection establishment from idle state. (I.e. no additional optimization to support NR-PDCP for SRB1 for idle to connected state transition)

5: The PDCP version change (release of old PDCP and establish of new PDCP) of SRBs can be supported via:
i/ handover procedure (reconfiguration with mobility); and
ii/ reconfiguration without mobilityControlInfo (when network implementation is sure there is no UL data in buffer). No user plane actions beyond release and establish of PDCP are to be specified for this case.

6 EN-DC operation should support a single reconfiguration procedure for bearer type change between MCG to/from split bearer and MCG to/from SCG bearer, when MCG bearer is configured with NR PDCP (before and after the bearer type change).

7 EN-DC operation where MCG bearer is configured with LTE PDCP, then direct bearer type change of such MCG bearer to split bearer or SCG bearer is performed is FFS.

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R2-1708272 PDCP anchor for SRB in EN-DC MediaTek Inc. discussion
R2-1707774 Bearer type harmonisation covering SRB NTT DOCOMO, INC. discussion
R2-1709431 NR PDCP for MCG SRBs and MCG bearer in EN-DC Huawei, HiSilicon discussion
R2-1707706 Discussion on PDCP version configuration OPPO discussion
R2-1707885 Remaining issues of bearer type harmonisation CATT discussion
R2-1707981 On use of LTE PDCP and NR PDCP Nokia, Nokia Shanghai Bell discussion
R2-1708018 SRB PDCP aspects Ericsson discussion
R2-1708130 Consideration on the MeNB enhancement for Supporting Bearer Type Harmonisation ZTE Corporation discussion
R2-1708225 NR PDCP for MCG bearer in EN-DC NEC discussion
R2-1708288 PDCP version of MCG bearer for DRB in EN-DC Sharp Corporation, Qualcomm Incorporated, KDDI, KT Corporation, NTT DOCOMO INC. discussion
R2-1708412 Harmonized bearer type vivo discussion
R2-1708794 PDCP protocol for MCG SRB and DRB in EN-DC Intel Corporation discussion
R2-1708981 Discussion on bearer type harmonisation CMCC discussion
R2-1709513 NR-PDCP for MCG-SRB1 Sony discussion
R2-1708944 Open issues for harmonized bearer type Qualcomm Incorporated discussion
Moved from 10.2.2.2 to 10.2.2.1

Late

R2-1708656 NR-PDCP for MCG-SRB1 Sony discussion

10.2.2.2 Bearer type change and L2 handling at mobility

Including bearer type change and L2 handing at mobility events.

Including output from email discussion [NR-AH2#16][NR] Bearer type change (Huawei)

Maximum 1 tdoc per company

R2-1709623 Summary of NR-AH2#16 Bearer type change (Huawei) Huawei, HiSilicon discussion
=> Revised into R2-1709698
R2-1709698 Summary of NR-AH2#16 Bearer type change (Huawei) Huawei, HiSilicon discussion
P2
- Lenovo think key change needs re-establishment of PDCP/RLC. It is done at handover for other reasons not just due to the key change.
- Nokia think even for key change case the RLC may not need to be re-established.
- Sony also share the view of Lenovo. OPPO support the Nokia view.
- Samsung think things are possible but why should we optimise the security key change which is a rare case. Qualcomm support the Samsung view. Ericsson also support this view and think optimisations can be considered later. LG also agree.
- DOCOMO think this is not a rare case and think it would be nice to consider.
- Huawei think it will be very difficult to conclude a single solution. Support Samsung view.
- Ericsson think we already have some cases optimised compared to LTE and it will be very difficult to conclude in time.

P4
- Ericsson wonder if S-KeNB can be used for a node that is terminated at the master node. Huawei this this is not the usual case.

Agreements for EN-DC
1: PDCP/RLC is re-established if security key is changed for the bearer.
(Maybe revisited is a solution for avoiding MAC reset is selected and the solution is suitable for avoiding PDCP/RLC reset)
2: MAC is not reset for the bearer type change between MCG bearer and SCG bearer.

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FFS: Whether PDCP is re-established for the bearer type change between MCG bearer and SCG bearer if NR PDCP is used for MCG bearer.
3: The original RLC entity should be released and new RLC entity should be established for the bearer type change between MCG bearer and SCG bearer. The detailed handling on LTE RLC and NR RLC should be further discussed in UP session.

R2-1708438 Allowed Bearer type changes and L2 handling Samsung Electronics Co., Ltd discussion

Agreements for EN-DC
1: If Bearer type change happens through handover procedure then for MCG bearer, split bearer and SCG bearer, MCG/SCG PDCP/RLC should be re-established and MCG/SCG MAC should be reset.
2: If Bearer type change happens through SN change procedure then SCG PDCP /RLC should be re-established, SCG MAC should be reset.
3a: EN-DC operation should support the one step (direct) bearer type change between MCG to/from MCG split bearer without using the handover procedure.
3b: EN-DC operation should support the one step (direct) bearer type change between SCG to/from SCG split bearer without using the handover procedure or SN change procedure.

R2-1708954 Discussion on bearer type change and L2 handling at mobility Huawei, HiSilicon discussion

Agreements for all architecture options
1: The direct change between SCG bearer and unified split bearer should be supported.

=> Offline discussion to progress on remaining aspects, including whether to support a mechanism to avoid the MAC reset and if supported then how, and how to handle PDCP version change for DRBs, and consider impact to (LTE and NR) RRC procedures (Huawei, Offline discussion #22)

R2-1709881 Summary of offline discussion# 22 Huawei discussion Rel-15 NR_newRAT-Core

=> We do not optimize for the key confusion and count rollover issues for EN-DC in Rel-15. For example, the solutions, handover, DRB release/addition, scheduling of restriction or LCID change can be used and it is up to network implementation.

✉ **[99#18][NR] Bearer Type Change (Huawei)**
Progress the following issues:
Issue 2: allowed bearer type change, including how to handle PDCP version change for DRB, only handover?
Issue 3: based on the answer of issue 1 and 2, to update the detailed L2 handling of bearer type change
Intended outcome: Report to next meeting on L2 behaviour for each bearer type change.
Deadline: Thursday 2017-09-07

R2-1707942 Discussion on bearer type change OPPO discussion
R2-1707996 L2 procedure for Per Bearer and Mobility Changes Lenovo, Motorola Mobility discussion
R2-1708094 Bearer type change Ericsson discussion
R2-1708499 Discussion on the bearer type change of duplicate bearer vivo discussion
R2-1709505 Avoiding L2 reset -analysis of solutions Sony discussion
R2-1708133 Consideration on the remaining issues of bearer harmonization ZTE Corporation discussion
Moved from 10.2.2.1 to 10.2.2.2

Late

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R2-1708648 Avoiding L2 reset -analysis of solutions Sony discussion

10.2.2.3 Packet duplication

Any remaining stage 2 aspects of packet duplication including FFS points identified in the last meeting - detailed topics should be discussed in stage 3 user plane.

Maximum 1 tdoc per company

R2-1708691 Remaining stage 2 issues for CA duplication and for DC duplication Huawei, HiSilicon discussion

Agreements
1 We will not support MAC CE activation/deactivation of duplication within LTE MAC.
2 We will not support the CA duplication in LTE
3 CA duplication is supported for all non-split UM DRBs if the bearer uses NR-PDCP, for all architecture options (apart from cases excluded by 1 and 2)
FFS: for AM DRBs and SRBs
4 DC duplication is supported for all split DRB and SRBs if the bearer uses NR-PDCP, for all architecture options
5 We will not introduce new bearer type changes into RRC, but user plane session can discuss and decide terminology for DC duplication, CA duplication, split bearer operation, etc (Some clarification is needed for how to handle CA duplication within the current bearer type change discussion)

R2-1708950 Further considerations for Packet duplication Qualcomm Incorporated discussion
=> Noted

R2-1708862 Stage 2 TP for RLC AM duplication Fujitsu discussion
- Ericsson think this would require frequent reconfiguration between AM and UM when duplication is activated or deactivated.
- LG support the proposal to avoid may issues which are being discussed in PDCP and there is no real motivation to use duplication with AM.
- Intel also support the proposal but would be ok if it was only for the CA case.
- Nokia think duplication is needed for AM including for measurement reports on SRB.
- MediaTek think the proposal makes sense for DRBs.
- OPPO think that AM should be supported for SRBs.
- ZTE support the intel view that it is not needed for CA. Qualcomm also support this view.
- Huawei think duplication is needed in AM and we have already agreed to support SRB DC duplication.

- Support for AM for CA duplication
Yes:11
No: 8
=> RAN

- Support for AM for DRBs with (CA and DC) duplication
Yes:12
No: 11

Agreement:
Priority in user plane session for addressing the stage 3 details:
1: UM for DRBs with CA and DC duplication; SRBs (AM) with DC duplication;
2: SRBs (AM) with CA duplication
3: AM for DRBs with DC duplication
4: AM for DRBs with CA duplication

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R2-1708333 Packet duplication in CA Ericsson discussion
R2-1707705 Control on UL packet duplication for split bearer OPPO discussion
R2-1708097 Stage-2 aspects of data duplication MediaTek Inc. discussion
R2-1708489 Duplication de/activation due to Scell or BWP de/activation vivo discussion
R2-1708735 Details of Duplication and Routing for SRB InterDigital discussion
R2-1708821 Support of CA packet duplication for RLC AM Intel Corporation discussion
R2-1709036 Uplink DRB Duplication Samsung discussion
R2-1709077 SCG Failure Case for Duplication SRB ITRI discussion
R2-1709095 Need for Duplicate RB LG Electronics Inc. discussion
R2-1709425 More consideration on uplink duplication in dual connectivity Nokia, Nokia Shanghai Bell discussion
R2-1709628 Configuration of PDCP duplication ITL discussion

10.2.2.4 Other

Any remaining stage 2 user plane aspects - detailed topics should be discussed in stage 3 user plane.

ECN

R2-1709469 Efficient support of ECN in NR Ericsson, Nokia, Nokia Shanghai Bell, Vodafone discussion

R2-1708289 Consideration on validity of enhanced ECN for NR Sharp Corporation, Qualcomm Incorporated, Fujitsu, MediaTek Inc., Intel Corporation discussion

- Previous 2 documents discussed together
- Samsung have the same conclusion as Sharp and others.
- Huawei also support the view of Samsung an others. LG also support this view.
- CMCC think ECN has never been used in LTE which is why an alternative approach was added in R14. So conclude it is not needed in NR.
- ZTE are also not convinced that this need to be done.
- Fujitsu wonder if the current LTE mechanism needs to be supported in NR. ZTE think we can't preclude the LTE approach as it is mainly eNB implementation. Qualcomm think this is part of the LTE baseline.

=> We will not support the enhanced ECN mechanism in Rel-15
=> Whether to describe the basic ECN (i.e. same as the LTE mechanism) in 38.300 NR stage 2 is FFS

R2-1708149 Consideration on the ECN in NR ZTE Corporation discussion
R2-1708822 ECN and RAN-assisted codec adaptation Intel Corporation discussion

Other

R2-1708446 Impact on Control and User Plane procedure due to Intra and Inter CU HO Samsung Electronics Co., Ltd discussion

- Huawei think for some cases that for example PDCP must be re-established. Samsung clarify that the proposal is just for PDCP.
- Ericsson there are 2 kinds of handover and some indication is needed to separate the case which is obvious. But this should not introduce new cases.
- Ericsson think this is partly covered in the TP on reconfiguration where lower RLC/MAC and PDCP can be separately re-established.

=> Noted

R2-1708833 Other Control plane aspects of Unified bearers Intel Corporation discussion
P1

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- Ericsson wonder how you prevent the UE from transmitting. Intel think it is an issue of how to capture it in the spec.
- Intel think that for a split bearer we should not suspend the split bearer but not use the SCG leg. But how we describe it needs to be considered.

=> Previous agreements related to SCG failure are updated as follows:

If radio link failure is detected for SCG, UE suspends SCG transmissions for all radio bearers, and reports SCG failure information to MN.
Upon SgNB failures, UE shall:
- Suspend SCG transmission for all DRBs;
- Suspend direct SCG SRB and SCG transmission for MCG split SRB;
- Reset SCG-MAC;
- send the SCGFailureInformation message to the MeNB with corresponding cause values .

Working assumption (SCG integrity protection failure case is to be confirmed after SA3 response) : At SCG failure (all cases) only the SCG part of split bearers should be suspended. (Already agreed for the SCG bearer and the SCG SRB)

R2-1708958 Consideration on DRX for EN-DC Huawei, HiSilicon discussion

- LG agree that separate DRX configuration is natural consequence of different numerologies.
- LG think that proposal 2 doesn't need to be captured. Qualcomm think proposal 2 is not needed.
- Huawei think that some coordination is needed.

Agreements
1: In EN-DC, separate DRX configurations are provided for LTE MCG and NR SCG.
2: The MeNB/SgNB provides the MCG/SCG DRX configuration to the SgNB/MeNB. Whether or not the SCG/MCG aligns DRX configuration with the MCG/SCG is left up to SgNB/MeNB implementation.

R2-1709626 Issues on VoLTE support in NE-DC China Telecommunications discussion

- Intel ask if the proposal is just for NE-DC. CT think the problem only exists for NE DC.
- LG think split bearer is for throughput and voice is not for voice service.
- Vivo think SPS can be supported on the PSCell.
- LG think RoHC has problems in split bearers which is why it was prohibited in LTE. For SPS we already agreed it, without any differentiation of the split bearer.
- Vivo think PDCP already needs to support out of order deliver together with RoHC.

=> Noted.

R2-1707884 Sync state in connected mode CATT discussion

Moved from 10.2.1 to 10.2.2.4

- Huawei is not sure whether the LTE agreements can be reused given L1 differences. E.g. there could multiple PDCCHs from one cell, random access aspects, etc.
- LG think the LTE stage 2 was too detailed.
- Ericsson think there are details here that have not been discussed in RAN1 or RAN2

=> Future discussion will take place in UP sessions (even discussion of text for stage 2)
=> Noted

R2-1708861 Stage 2 TP for LCP Fujitsu discussion

Moved from 10.2.1 to 10.2.2.4

- MediaTek think the TP might not be complete.
- LG thinks the text is too detailed for stage 2
- Nokia think the text is a good starting point

=> Revised in R2-1709829 (Offline discussion #23)

R2-1709829 Stage 2 TP for LCP Fujitsu discussion

=> Change radio bearers to logical channels

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=> Agreed with the change above.

R2-1708182	Activation and Deactivation time of Secondary Cells	Ericsson	discussion
R2-1708183	[DRAFT] LS on Activation and Deactivation time of Secondary Cells	Ericsson	LS out
R2-1708439	Bearer handling in NR-E-UTRA Dual Connectivity	Samsung Electronics Co., Ltd	discussion
R2-1708497	Disscussion on the support of UP protocol for the harmonized bearer type	vivo	discussion
R2-1709028	Lossless PDCP version change between LTE and NR	Samsung	discussion
R2-1709515	Discussion and proposal to UE Overheat issue	Sony	discussion

Late

R2-1708658	Discussion and proposal to UE Overheat issue	Sony	discussion

10.2.3 MN/SN measurement coordination

Including consideration of the response from RAN4 to the questions we asked from RAN2#98.

Maximum 1 tdoc per company

R2-1708796 Measurement coordination for EN-DC Intel Corporation discussion

- CATT asks how the UE will consider the 2 meas objects as one or 2 layers. Intel assume it will be defined in RAN4 whether they get considered as one or 2 layers.
- Ericsson agree with Intel's proposal. It is a network responsibility to resolve this.
- LG think the UE might measure a single frequency layer twice and we need coordination to avoid this double measurement.
- Qualcomm also support Intel. The discussion in RAN4 is whether the UE has a single measurements processes and that is RAN4 issue.
- ZTE agree with Intel that the measurement configurations are independent. Wonders if RAN4 can understand all the parameters.
- Nokia think RAN4 is still working one cases where they might be considered as 2 layers.
- Huawei think from RAN2 perspective we can just assume that the MN sends the SN the parameters of the measurement object. SN can decide whether to use the same or different configuration.
- DOCOMO think unless we receive info from RAN4 we cannot progress on coordination.
- Samsung think we could agree that there is no need for any UE specific coordination. Huawei agree this is a simple approach. But could not be used if the measurement capability of the UE depends on UE capabilities.

=> We will discuss again whether any coordination is required when we have more information from RAN4.

> Working assumption: UE receives independent measurement configuration from MN and SN. UE does not do any manipulation of parameters in order to make the measurements configurations consistent (i.e. network is responsible to ensure they are consistent if it wants to ensure these are considered as a single measurement layer)

R2-1708138 Consideration on measurement coordination in LTE/NR tight interworking ZTE Corporation discussion

- Huawei explain that the white list and black list might impact the number of cells to be measured and hence have some impact to performance.

P4

- ZTE clarify the maximum number refers to signalling requirement.

P6

- Intel think we need to understand the motivation for changing from LTE approach where RAN4 just specify a number. ZTE explain that RAN4 just specify a minimum but network can configure more than this. Huawei have a different understanding and assume that the UE's

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never support more than the minimum, the network would not risk to use more than the minimum.

Agreements:
1 RAN2 assume that for measurement objects on the same frequency configured by both MN and SN, at least the following parameters) can be configured differently without affecting whether the 2 measurement objects will count as 1 or 2 measurement layers.
- offsetFreq
- Cells to apply alternative TTT (if agreed for NR)
- T312 (if agreed for NR)
- cellIndividualOffset (if agreed for NR)
- Black list

FFS White cells
Other parameters are FFS.

2 For MR-DC, RAN2 will specify separate signalling requirements for the maximum numbers of MeasObjectID, ReportConfigID and MeasID in MN and SN.

3 In MR-DC, both MN and SN can configure independent s-Measures towards UE, with s-Measure configured by MN referring to PCell, and the s-Measure configured by SN referring to PSCell.

=> Send LS to RAN4 to inform them of our decision and ask them to confirm our assumptions.
=> Draft LS in R2-1709834 (Offline discussion #27)

R2-1709834 Draft reply LS on UE measurement capabilities across LTE and NR ZTE LSout
=> add would to " any parameters that would need to be configured "
=> Change white cells to white list.
=> Approved in R2-1709851

R2-1709432 Measurement coordination for LTE-NR DCHuawei, HiSilicon discussion
R2-1707759 Measurement Gap Configuration in MR-DC OPPO discussion
R2-1707971 Considerations for the MN and the SN to configure measurement objects consistently on the same carrier Spreadtrum Communications discussion
R2-1708413 Measurement in case of SCG failure vivo discussion
R2-1708900 NR measurement object configuration in SN LG Electronics Inc. discussion
R2-1709094 Measurement coordination between LTE and NR CMCC discussion
R2-1709638 Coordination of NR Measurements between MN and SN Qualcomm Incorporated discussion

10.2.4 MN/SN procedures

Any remaining aspects of MN/SN procedures, stage 2 signalling flows, information passed between nodes, etc including (stage 2) FFS points identified in the last meeting. Detailed topics should be progressed in stage 3 AI 10.4.1.8 on 'Inter-Node RRC messages'.

R2-1707887 Measurement result exchange between nodes CATT, CATR discussion
P1
- IDC think the MN initiated change was just for load balancing and hence don't see a need for the proposal. CATT think even if it is needed for load balancing then the results are important. Samsung think we did not agree to provide any target cell in this case and hence the measurements are needed for SN to decide the cell.
- LG see no reason not to send the results.
- Nokia think this is like the SN addition case.

P3
- Samsung think we normally encode according to the target. Huawei agree and think the results should always be encoded according to the target (i.e. in NR RRC)

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- Nokia think there can also be some beam related measurements and these should use NR format. SO it is actually a mixed format using LTE and NR parts.
- ZTE support the Samsung view. Ericsson think that to send it in NR format then the MN will need to convert it.

Agreements
1: Measurement results relating to the target SN can be provided by MN to target SN at MN initiated SN change procedure.
2: Measurement results of target SN can be forwarded from source SN to target SN via MN at SN initiated SN change procedure.
3: Measurement results according to measurement configuration from MN are encoded according to NR RRC when they are provided by MN to SN in SN Addition Request message (EN-DC).
4: During SN initiates SN change procedure, measurement results according to measurement configuration from SN are encoded according to NR RRC when they are provided by MN to SN in SN Addition Request message.

R2-1708128 Consideration on the DRB and SRB parameters Transferred between MeNB and SgNB ZTE Corporation discussion

P1
- OPPO support the proposal
- Ericsson think that the MN should make the decision whether the bearer is split. Hence do not support the proposal. Huawei have the same view as Ericsson as the MN has the full picture and knows all QoS information. ZTE thinks the MN doesn't have the full picture about the SN. ZTE also think there is no case like this in LTE.
- Samsung have the same view as Ericsson and think we can follow LTE approach.
- IDC have the same view as ZTE. CATT have the same view as Ericsson.

Agreements
1: For EN-DC, each DRB, the MN node is responsible to decide whether the DRB is split or not.
2: At MCG split SRB configuration, LTE MeNB indicates SRB1S or SRB2S to NR SgNB.

R2-1709435 UE-AMBR enforcement in EN-DC Huawei, HiSilicon discussion
- Nokia prefer to support option 2.
- DOCOMO ask what are the specification impacts. Huawei explain that in LTE DC the discussion was also started in RAN2
- CATT think in the end RAN3 made the decision for LTE DC

=> Issue left for RAN3 to discuss

R2-1708136 Consideration on the counter check procedure in LTE/NR tight interworking ZTE Corporation discussion

P1
- Ericsson think counter check is not so frequent so it is ok to always possible to use the MN procedure. Huawei have the same view as Ericsson and anyway the MN is required to take some action such as contacting the CN as specified by SA3.
- Vivo think informing the CN is not a reason not to allow the SN to perform the counter check.
- LG think the procedure is not very urgent and can be performed by the MN.
- Spreadtrum support the ZTE proposal.
- Nokia think it should be triggered by the SN because now there the possibility to use SRB3.
- Samsung explain that in LTE DC it is triggered by the SN but the procedure is performed by the MN. And anyway the procedure from MN needs to be available for the case that SRB3 is not available.
- Samsung think that for EN-DC the existing counter check would not even need to be extended.

Agreements for EN-DC and NG-EN-DC and NE-DC

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1: The counter check procedure should be triggered by MN and SN independently (as in LTE DC)
2 Counter check procedure is performed by MN (i.e. we will not add support for Counter Check performed by the SN).

R2-1708020 Clarification on EN-DC procedures Ericsson discussion

P1

- Huawei support both proposals but suggest we limit to R15
- Nokia think this also implies that we don't add events to support these transitions.

Agreements
1: For EN-DC, it is not necessary to support inter-RAT SN change procedure with single RRC reconfiguration (i.e. no transition from EN-DC to LTE DC) in Rel-15
2: For EN-DC, it is not necessary to support inter-RAT MN change procedure while keeping the SN (i.e. no transition from EN-DC to NR-NR DC) in Rel-15
3: We will not add measurement events that are targeted to these scenarios.

=> Offline discussion to identify the key stage 2 aspects that still need to be address in this AI. May be the progressed by email to the next meeting. (ZTE, Offline discussion #28)

Update from offline in R2-1709953

R2-1709953 Status of Offline discussion #28: identify key remaining aspects for MN/SN procedures ZTE

=> Topics will be discussed in the email discussion

R2-1708022 Race conditions in case of SgNB release procedures Ericsson discussion
R2-1708095 Discussion on the SCG change procedure Ericsson discussion
R2-1708131 Consideration on the forward compatibility of NR-NR DC structure ZTE Corporation discussion
R2-1708137 Consideration on the intra-MN handover without SCG change involved ZTE Corporation discussion
R2-1708201 MN-SN Information Exchange for LTE-Assisted NR Initial Access AT&T discussion
R2-1708243 TP on SN modification without MN involvement HTC Corporation discussion
R2-1708367 Discussion on measurement configuration enhancement in INACTIVE state OPPO discussion
R2-1708445 Discussion on Inter MN handover without SN change Samsung Electronics Co., Ltd discussion
R2-1708598 Split SRB: HO command duplication Ericsson discussion
R2-1709023 NSA procedure FFS: SCG change definition in ENDC / Information for DRB configuration Samsung Electronics Romania discussion
R2-1709025 SN modification call flow: SCG DRB release case Samsung Electronics Romania discussion
R2-1709037 [Draft] LS on the support of SN modification call flow Samsung Electronics Romania discussion
R2-1709132 Provision of measurement results to MN LG Electronics Inc. discussion
R2-1709243 Format of measurement results to be shared from MN to SN Nokia, Nokia Shanghai Bell discussion
R2-1709275 Secondary node change procedure for 0ms interruption time in LTE-NR tight interworking TCL discussion
R2-1709330 Remaining issue for reconfiguration coordination HTC Corporation discussion
R2-1709403 Inter Master Node handover with Secondary Node change NTT DOCOMO INC. discussion
R2-1709433 Procedure of Secondary Node change Huawei, HiSilicon discussion
R2-1709434 Definition and usage of SCG change for LTE NR DC Huawei, HiSilicon discussion
R2-1709436 MN/SN information exchange Huawei, HiSilicon discussion

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R2-1709639 Open Issues for MN/SN Procedures Qualcomm Incorporated discussion

Late

R2-1709690: [Draft] LS on the support of SCG change indication for new SCG change case Samsung LSout

10.2.5 NSA operation - other aspects

Any remaining stage 2 aspects of SCG SRB, split SRB, SN/MN failure handling, security for NSA, etc including (stage 2) FFS points identified in the last meeting. Note security for SA is treated under AI 10.2.15. Detailed topics should be progressed in stage 3 AI 10.4.1.3.4 on Connection control procedures - NSA aspects.

Security

R2-1708096 Security aspects of bearer harmonisation Ericsson discussion

- Qualcomm supports the proposal, it meets the SA3 requirement.
- Ericsson explain the intent is that we KeNB and S-KeNB and we just indicate to the UE which key to use.
- Lenovo think the PDCP anchor is nor transparent to the UE. Hence assumes a separate key for split bearer. Ericsson think transparency was not the main motivation but to avoid bearer type changes.
- Huawei wonder if this results in different behaviour when changing from MCG bearer when changing to split bearer with KeNB and split bearer with S-KeNB.
- CATT thinks UE does need to know whether it is KeNB or S-KeNB but just which one to use.
- Ericsson think even if the UE knows the termination point there is no UE behaviour associated with this. Intel agrees.
- Nokia agree with Ericsson that we don't need to care about the different bearer types, we just have one bearer with one or 2 RLC entities. Ericsson think we could just the key configuration and the lower layer configuration of 1 or 2 lower layer configurations.
- Nokia see that stage 2 will still contain this SCG, split, etc terminology but for RRC it may not be seen. Intel have a similar view.

Agreements
1 For EN-DC, the network can configure each DRB to use 1 key out of a set of 2 keys (KeNB and S-KeNB derived as specified today)
Note: This agreement does not change the use of the SCG bearer, MCG bearer, SCG split bearer and MCG split bearer terminology in stage2 specs.

R2-1709502 Remaining aspects of NR Security SAMSUNG Electronics Co., Ltd. discussion

- LG think the agreement in SA3 is just an interim agreement. Samsung explain their interim agreements are because it is just study item.
- Sony ask if IP can be enabled or disabled at handover. Huawei understand that the information will come from CN and hence it should not change at handover, at least for Xn based handover.
- Nokia think the RAN would not be mandated. Samsung think that both eNB and UE must support it.

Agreements for NG-EN-DC and NE-DC and NR SA
1 UP integrity protection can be configured on a per radio bearer (i.e. per DRB) basis.

R2-1708134 Consideration on remaining security issues ZTE Corporation discussion
R2-1708414 Further consideration on integrity check failure vivo discussion
R2-1708443 Discussion on Security keys Samsung Electronics Co., Ltd discussion
R2-1709437 S-KeNB related issues for LTE-NR interworking Huawei, HiSilicon discussion
R2-1709438 Counter check in LTE-NR DC Huawei, HiSilicon discussion

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R2-1709695 [DRAFT] Reply LS on NR security input parameters Ericsson LS out Rel-15 NR_newRAT-Core To:SA3 Cc:ETSI SAGE

SCG failure

R2-1709234 Remaining Issues for UE Procedures on SCG Failure BEIJING SAMSUNG TELECOM R&D discussion

- Samsung explain the main intent is to have no autonomous procedures. If the results were being carried by MCG SRB then MN can decide whether it would like to do anything with them.
- CATT wonder if there is a real purpose for using the information.
- Ericsson think it is not necessary to mandate a UE behaviour, it could suspend or not the measurements.
- Nokia explain the LTE-DC principle is that the UE continues measurements and the only difference here is that the configuration may have come from the SN.

Agreements
1: After SCG failure, the UE continues to perform measurements based on the SN measurement configuration. (UE does not autonomously change the routing of the SN measurements). Consequence is that, if the SN measurement configuration configured the UE to route measurements via MN, then these will continue to be reported after the SCG failure.

2: Upon detection of SCG failure, UE performs following steps (as in LTE-DC):
1) UE keeps the current SCG configuration used prior to detection of SCG failure
2) Perform UE actions corresponding to SCG failure (i.e. suspension of SCG transmissions and SCG failure report transmission to MN)

3: Measurement results provided in SCGFailureInformation message can be forward to the SN by inter node message (encoded in NR RRC format as previously agreed).
FFS Whether the measurement results provided in SCGFailureInformation are encoded according to LTE RRC or NR RRC.

=> Offline discussion to conclude on whether NR or LTE is used to encode the measurement results and to start to progress on the detailed content of the measurement results. (Vivo, Offline discussion #30)

- Update from offline R2-1709912

R2-1709912 Report for offline discussion 30 on measurement results format Vivo

Agreements
1: Measurement results according to SN configuration provided in SCGFailureInformation are encoded according to NR RRC format
2: If SCGFailureInformation contains SN configured measurement results, MN will forward those measurements to SN
3: The following measurements are included in SN part of SCGFailureInformation
- ARFCN value and NR serving cells and NR neighbour cells measurement results with a quality indicator (RSRP, RSRQ or equivalent).

FFS Beam level measurements

R2-1709246 Further considerations on UE measurements during S-RLF Nokia, Nokia Shanghai Bell discussion

R2-1707889 Open issues of SCG failure CATT discussion

R2-1708016 UE behaviour in case of SCG RLF when SCG is the configured path Ericsson discussion

R2-1708982 Discussion on measurement of SCG RLF CMCC discussion

R2-1709439 Measurement handling in case of SCG failure Huawei, HiSilicon discussion

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R2-1709245 Further considerations on SCG Failure Indication handling Nokia, Nokia Shanghai Bell discussion

R2-1709658 Discussion on S-RLF NTT DOCOMO, INC. discussion

R2-1709659 LS on NR measurement upon S-RLF NTT DOCOMO, INC. LS out

Dual Connectivity with suspend/resume

R2-1708808 Inactive and dual connectivity Intel Corporation discussion Rel-15 NR_newRAT-Core

moved from 10.4.1.6.5 to 10.2.5

P1

- OPPO thinks in most cases the UE will not resume in the same cell and hence the configuration will be release. Ericsson agree with the proposal to keep the configuration when resuming in same cell
- CATT think that the DC configuration should be released as the state is targeted for the UE moving. Nokia also think it is a limited use case. LG have the same understanding and think that the network could try to use a blind addition of SN.
- Samsung understand the motivation but think the benefit is somewhat limited.
- IDC think the case where the configuration is kept should be supported.
- Ericsson think the suspend/resume and inactive are also important for stationary UE to reduce CN signalling. Hence this is the main use case.
- Qualcomm support the proposal.
- Ericsson think the situation is the same for EN-DC with suspend/resume and for NR-DC with inactive. Intel explain this is intended to be a compromise to minimise complexity while maximise the benefit.
- Intel explain that without this there is a lot of signalling including on the CN side whenever the UE suspends. This can be prevented if the UE has not moved.
- Samsung think the same DC configuration can be provided back to the UE at resume. The bearers in the CN could be left unchanged when the UE suspends and only changed if needed at resume.
- Qualcomm think we can avoid bearer type change at suspension.
- Qualcomm explain that for LTE-DC with suspend the SCells are released at the time of resumption. Ericsson explain it was done this way in R13 as a quick solution of just copying re-establishment.

=> For MR-DC and NR-DC we will not support that the UE can resume the DC configuration after the UE returns from suspended/inactive in Rel-15.

R2-1708024 RRC suspend/resume in MR-DC Ericsson discussion

R2-1708135 Inactive mode handling in NSA ZTE Corporation discussion

R2-1708271 Fast DC configuration in EN-DC MediaTek Inc. discussion

R2-1709640 MR-DC in Inactive Mode Qualcomm Incorporated discussion

R2-1707760 SN Handling when Transition from CONNECTED to INACTIVE OPPO discussion

moved from 10.4.1.3.5 to 10.2.5

Single Tx EN-DC

R2-1707822 Supporting 1Tx UE in NR Nokia, Nokia Shanghai Bell discussion

- Lenovo ask if the UE needs to know or can just rely on scheduling.
- Nokia agree apart from autonomous transmissions such as SR and RACH.
- Intel think RAN1 understand that for LTE side the UE needs to know the pattern but for NR side the UE doesn't need to know, it is just done by scheduling. Ericsson think RAN1 has not concluded whether the pattern needs to be known by the UE.
- Ericsson think that even for LTE the network can configure a pattern to coordinate the 2 sides. If no pattern is configured then the priority rules might kick in.
- Lenovo think if both MN and SN know the pattern then it can be managed by the network.

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- T-Mobile think this is important as a capability in all bands.
- Intel think the capability per band combination should be sufficient and we should not consider for which band combinations it is possible to indicate. Apple agree with Intel.

=> Draft LS to RAN4 to ask if a UE capability "need for 1 Tx operation" is required (e.g. if the need for 1 Tx operation applies to all operating with a given band combination or only some UEs), and if so with what granularity it should be provided (e.g. per band combination). (Nokia, Offline discussion #31). Draft LS in R2-1709843

R2-1709843 [Draft] Reply LS Supporting 1Tx UE in NR Nokia LS out

=> Will not be sent

R2-1709609 Single UL transmssion in NSA and SA NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Moved from 10.2.15 to 10.2.5

R2-1709625 UE capability indication for single UL transmission of LTE-NR DC Apple discussion

=> Revised in R2-1709700

R2-1709700 UE capability indication for single UL transmission of LTE-NR DC Apple discussion

R2-1707823 Draft LS on supporting 1Tx UE with NR Nokia, Nokia Shanghai Bell discussion

Other

R2-1708019 Embedded RRC transport in MR-DC Ericsson discussion

- Intel think a generic container message would be more application. Huawei have the same view as Intel and it is more future proof to use a generic message. IDC have the same view. Samsung have the same view as Intel and others.
- Intel see no benefit to reuse the LTE Measurement report.

Agreements
1 For the case of MR-DC, a new Generic Container message carries a transparent container IE to hold an SN MeasurementReport message. Sent on SRB1

R2-1709244 Comparison of RRC reconfiguration latency for SCG SRB with MCG routed SRB Nokia, Nokia Shanghai Bell discussion

=> Noted

R2-1708574 5G Availability Indicator Vodafone Telekomünikasyon A.S. discussion Rel-15

Moved from 10.4.1.5.1 to 10.2.5

- Qualcomm has concerns about NR indicator to avoid the UE having to measure the NR cells. Would like the LTE cell to provide the NR neighbour cell information in SIBs.
- Vodafone would like to provide the indicators as today in UMTS.
- KDDI support Qualcomm view.
- Vodafone think it means NR is present and not necessarily that EN-DC is present.
- NEC think this is to enable a UE in LTE RRC idle to provide an indication as it can potentially use NR service.
- DT thinks that in UMTS the indicators where cell wide but for EN-DC the NR might not be available across the whole LTE cell.

=> Draft LS to SA2 to say that it is feasible to include the indicator in LTE system information and that we assume this indication would be provided to upper layers and there would be no AS actions associated with it (e.g measurements, capability check, etc). Can indicate to SA2 that the indicator from the LTE cell is no guarantee that EN-DC will be configured for the UE when is active. Also ask question (for information) about how they see the indicator to be used. Draft LS in R2-1709844 (Vodafone, Offline discussion #32)

R2-1709844 LS on NR indication Vodafone LS out

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- CMCC , Huawei , DT and ZTE had concerns about removing the questions:

1. It was questioned whether the indicator provides evidence to the user that a particular operator has deployed EN-DC or it is not only directly related to this EN-DC deployment.

2. If the indicator is related to EN-DC: NR and LTE coverage within EN-DC might be different in some of the deployment scenarios due to different frequencies used.

3. If the indicator is related to EN-DC: The devices might support different bands and band combinations. So, even if the device receives the indicator over LTE in Idle state, it would not be possible to configure EN-DC operation for a particular UE as it might not support band combinations deployed by a particular operator.

=> Remove the questions
=> Approved in R2-1709978

R2-1708228	AS support for 5G indication	NEC	discussion	Rel-15	NR_newRAT-Core
	Moved from 10.2.15 to 10.2.5				
R2-1707692	Remaining issues on SCG SRB establishment	FiberHome	discussion		
R2-1708013	SCG SRB setup and configuration	Ericsson	discussion		
R2-1707886	Measurement results of serving cells	CATT	discussion		
R2-1707888	Consideration on duplication on SRB for CA case	CATT	discussion		
R2-1708014	RRC race conditions in EN-DC	Ericsson	discussion		
R2-1708015	Handling of duplicates and out of order SRB PDUs in EN-DC	Ericsson	discussion		
R2-1708023	Remaining issues related to measurements during S-RLF	Ericsson	discussion		
R2-1708132	Consideration on the necessity of unified PDCP version of SRB	ZTE Corporation	discussion		
R2-1708150	Consideration on UM segment operation mechanism	ZTE Corporation	discussion		
R2-1708437	Discussion on Split bearer handling during SN change	Samsung Electronics Co., Ltd	discussion		
R2-1709053	SN continuation on MN failure in EN-DC operation	Samsung Electronics Romania	discussion		
R2-1709114	Power management by cross-RAT signaling in NSA configuration	Qualcomm Incorporated	discussion		
R2-1709163	Control of UL Split or Duplicate MCG SRB	Samsung Electronics GmbH	discussion		
R2-1709407	Support of full configuration per CG	HTC Corporation	discussion		
R2-1709440	UE capability enquiry via SCG SRB	Huawei, HiSilicon	discussion		
R2-1709644	Considerations on SRB split bearer and direct bearer	Qualcomm Incorporated	discussion		

Withdrawn

R2-1708025	Addition, modification and release of DRBs in EN-DC	Ericsson	discussion

10.2.6 UE capabilities

No documents should be submitted to 10.2.6. Please submit to 10.2.6.x.

10.2.6.1 NR UE capabilities

Structure of information, capability size reduction and how to address the 'RAN2 aims' agreed in last meeting (i.e. to avoid duplication of BCs to indicate combinations of DL and UL bands, and to separate baseband capabilities from BCs)

Including output from email discussion [NR-AH2#09][NR/] UE capabilities (Intel)

R2-1708785	Email report on [NR-AH2#09] UE capabilities	Intel Corporation	discussion

- Qualcomm support the general direction of the proposals. See the potential but not sure we can yet estimate the gain without capability details.
- OPPO also support the proposal. Intel explain there is not much different between 1 and 3, 3 is just a variation of 1 that optimises the size further at the expense of UE flexibility.

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- Huawei confirm solution 1 and 3 are in the same direction.
- Ericsson is fine to go in this direction but understand that solution 1 would be significantly bigger than solution 3. Also would like to understand why the MIMO layers is still within the BCs.

Agreements
1 RAN2 will define a solution based where the baseband capabilities are extracted from the BC structure and convey the baseband capabilities in a separate table. We intend to avoid providing fallback combinations and duplication of combinations.

=> LS to RAN4 (Intel, Offline discussion #33)

R2-1709925 LS on Baseband capability signaling Intel LS out
=> Approved in R2-1709954

R2-1708031 UE Capability Signalling Structure for NR Ericsson discussion
R2-1709441 Capability design for SA NR Huawei, HiSilicon discussion

Avoiding UL/DL duplication

R2-1708784 Decoupling DL band and UL bands Intel Corporation discussion
- Huawei ask if any UL BC could combine with any DL BC. Intel think it will be defined in RAN4 which BCs can work together.
- LG agree with the intention to do this.
- Ericsson thinks that the DL/UL BCs with indexes to the DL and UL BCs will cause a lot of overhead. Suggest that a single DL BC could list multiple UL BCs. Ericsson think that can avoid the need to include the band numbers for the UL bands in the BCs.

=> Offline discussion to try to conclude. (Intel, Offline discussion #34)
- Update from offline: Not sufficient discussion to conclude.

✉ **[99#24][NR] Decoupling DL band and UL bands (Intel)**
To progress the decoupling of DL and UL bands in capabilities.
Intended outcome: Report to next meeting
Deadline: Thursday 2017-09-21

Index based approach

R2-1709399 UE capability retrieval framework in NR NTT DOCOMO INC. discussion
R2-1707837 Reducing the size of UE capabilities Qualcomm Incorporated discussion
R2-1709453 NR UE Capability Size Reduction LG Electronics Inc. discussion

10.2.6.2 UE categories

Including categories for EN-DC and for NR.

Maximum 1 tdoc per company

R2-1707838 EN-DC UE category Qualcomm Incorporated discussion
- Qualcomm clarify there would be a category indicated per band combination. The critical thing is for it to be clear what the RAT can do for each BC.
- MediaTek think there is sharing inside the UE but think it should be fixed per BC. Think the information provided per BC might not be called the category.
- AT+T agrees with the proposals. Think the independent signalling is important also on the network side as the networks may not be able to coordination the sharing.

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- Ericsson think proposal 2 would have big impact on signalling size and goes against the attempt to remove baseband capabilities from BC
  Intel think it is important for UE implementation but may not be best to include the category per BC. Think peak data rate per RAT needs to be indicated per BC.
- Qualcomm clarify that they assume that similar parameters would be associated with category as today. It is important that the network knows how much resource the eNB can use.
- Nokia ask if fallback combinations would be same or different.
- Ericsson wonder if the mutual understanding of network and UE can be determined from other parameters without the category. Qualcomm think it might be feasible but RAN1 might need to specify how the rate can be derived from the parameters.

=> Noted

R2-1707773 UE category design for MR-DC and NR NTT DOCOMO, INC. discussion

- MediaTek ask how the network will decide to split the capability. DOCOMO explain one option wold be to consider the BC and could also take into account traffic load situation.
- MediaTek ask if it would allow any split. DOCOMO explain that the network might also consider the UE standalone category.
- DOCOMO clarify that the EN-DC category could be lower than the sum of the individual LTE and NR categories. AT+T think that the individual capabilities would need to be signalled as well.
- Intel think the network selection of the split will impact the soft buffer but the soft buffer size will be different for LTE and NR so it is not easy to flexibly spit these.
- Samsung think the main purpose of category is to indicate peak data rate. Think many peak data rates will need to be provided and so we can just signal a peak data rate value. LG agree with Samsung's view and the peak rate and soft buffer can be shared between MN and SN. T-Mobile agree with Samsung and LG
- Nokia think it would be good to avoid the need to add new categories every time we add support for new BCs. Ericsson agree and wonder if we need category for this purpose as all.
- CMCC think LTE and NR category is enough and don't need a category for NSA. Assume one cat per RAT.
- Huawei think categories are good to control the number of different UE types in the market, not just marketing.
- Intel think there needs to be some way to indicate that NSA peak rate is different from individual RAT peak rates, and should be per band combination.
- Ericsson think one purpose of the category was to indicate a rate that is lower than that theoretically possible for the BW supported. Qualcomm agree this is a difficult part if we rely on derivation.

=> Offline discussion to progress the issue. The following text can be used as a starting point in that offline: (Ericsson, Offline discussion #36):
From the band combination signalling, it shall be possible to derive the peak data rate for LTE side and the peak data rate for NR side per band combination. These peak data rates can be supported simultaneously.
For case of a NR SA UE that supports single carrier operation only, some further mechanism (e.g. like category) is required to enable support of data rates lower than the maximum possible for the supported BW.

R2-1709913 Result of offline discussion #36 on need for UE Categories Ericsson

Agreements for functional behaviour associated with UE capabilities

Proposal 1 In NR, the number of supported MIMO layers is signalled as explicit UE capability and not part of a UE category.

Proposal 2 In NR, the modulation schemes are signalled as explicit UE capability and not part of a UE category.

Proposal 3 RAN2 assumes that the UE's band combinations together with the baseband capabilities (modulation scheme, MIMO layers, …) comprise all information necessary to calculate the maximum data rate achievable on each serving cell, in each cell group and per UE. Providing the data rate (category) explicitly is therefore unnecessary.

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Proposal 4 A per-UE category is required for UEs supporting a peak data rate that is lower than the data rate achievable according to the above-mentioned parameters. However, if P3 is agreed, UEs supporting dual connectivity (MR-DC, NR-NR DC) shall not advertise such a lower data rate (per UE category) to avoid the need for inter-node negotiation of the data rate split.

=> Proposal above to be progressed at lunch 14:15.

R2-1709964 Result of offline discussion #36 on need for UE Categories Ericsson

Agreements
- In NR, the number of supported MIMO layers is signalled as explicit UE capability and not part of a UE category.
- In NR, the modulation schemes are signalled as explicit UE capability and not part of a UE category.
- RAN2 assumes that the UE's band combinations together with the baseband capabilities (modulation scheme, MIMO layers, …) comprise all information necessary to calculate the maximum data rate achievable on each serving cell, in each cell group and per UE.
- If RAN1 and RAN4 agree with that assumption, RAN2 intends to apply the following:
- "A non-DC UE supporting a peak data rate that is lower than the data rate achievable according to the above-mentioned parameters indicates this by a per-UE category (data rate).
- However, a UE supporting dual connectivity (MR-DC, NR-NR DC) shall not advertise a category (data rate) that is lower than the highest data rate achievable according to any of the DC band combinations (to avoid the need for inter-node negotiation of the data rate split)."

R2-1709965 DRAFT LS on UE categories and capabilities Ericsson LS out

=> Remove " bits per "TTI") "

✉ **[99#01][NR] UE capability LS (Ericsson)**
Intended outcome: Approved LS to RAN4 in R2-179979
Deadline: Monday 2017-08-28

=> The LS is approved in R2-1709979.

R2-1708035 UE Categories for NR and EN-DC Ericsson discussion
R2-1707824 UE categories for EN-DC and NR Nokia, Nokia Shanghai Bell discussion
R2-1708012 On UE Category MediaTek Inc. discussion
R2-1708202 Capability mechanisms for EN-DC AT&T discussion
R2-1708786 UE category for EN-DC Intel Corporation discussion
R2-1709011 UE categories for EN-DC Samsung Electronics France SAdiscussion
R2-1709442 UE category for EN-DC Huawei, HiSilicon discussion

10.2.6.3 UE capability coordination

Including discussion of identified open issues for index based capability coordination, with aim to make a conclusion in this meeting.

Maximum 1 tdoc per company

R2-1709247 Index based capability coordination for MR-DC Nokia, Nokia Shanghai Bell discussion
Moved from 10.2.6.2 to 10.2.6.3

R2-1708032 UE capability coordination for LTE/NR interworking Ericsson discussion
- Discussed jointly with previous paper.
- Qualcomm support the index based approach. LG also support the index based approach.
- ZTE agree with some observations from Ericsson but still prefer the index based approach.

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- Ericsson clarify that the cost functional proposal does not need to be considered based on the discussions yesterday.
- Ericsson want to create a single structure based on the LTE NR BCs and extract from that the baseband capabilities. CATT also support the index based approach and think that it will still be possible to extract the baseband capabilities in this option. Qualcomm agree that for each of the indexed CA combination there can be a linking to a baseband capability so it should be possible to address the Ericsson concern.
- Ericsson think that at least the band combination table that lists the band numbers should be visible to both to avoid duplication of this content. But we could apply indexing for the baseband capabilities. Huawei agree with the Ericsson view.

=> Offline discussion to progress the issue. The following text can be used as a starting point in that offline: (Nokia, Offline discussion #37):
- Introduce MR-DC band combinations that is visible to both MN and SN. This at least contains the band and BW information.
- Inter node signalling for capability coordination can be use an index into the band combination structure to indicate to the other node the MR-DC band combination(s) that can be used by the other node.
- Baseband capabilities can be coordinated using an index approach where the baseband capabilities of the other node are not visible. (This assumes some abstraction of the baseband capabilities from the band combinations, as agreed previously, is separate for the 2 RATs)

R2-1709896 Report for offline discussion 37 Nokia (rapporteur) discussion Rel-15 NR_newRAT-Core

Agreements
1: Agree to have common MR-DC band combination parameter structure listing supported LTE and NR band combinations for MR-DC.
2 RAN2 aims that the solution allows the sharing or not of baseband capabilities

=> RAN2 continues to progress on details of how the NR baseband processing capabilities may be extracted from the NR band combinations (and how NR peak data rate can be calculated from band combination and baseband capability).
=> RAN2 continue to discuss details of MR-DC capability coordination based on Option 1 and 2.
- Detail points to be added to the email discussion scope.

R2-1709966 UE capability coordination Nokia
=> Agreed as scope of 3 email discussion (rapporteurs Intel, DOCOMO, Nokia)

R2-1708787 Index based capability coordination Intel Corporation discussion
R2-1707835 LTE/NR UE capability dependency and coordination Qualcomm Incorporated discussion
R2-1707972 Considerations for UE capability coordination for EN DC Spreadtrum Communications discussion
R2-1708129 Consideration on the Index based Capability Coordination procedure ZTE Corporation discussion
R2-1708203 UE capability indication of bearer split for LTE-NR Dual Connectivity AT&T discussion
R2-1709443 Capability design for LTE-NR DC Huawei, HiSilicon discussion
R2-1709451 Capa coordination in EN-DC LG Electronics Inc. discussion
R2-1709482 EN DC UE capability coordination, index based Samsung Telecommunications discussion
Late
R2-1707890 Index based capability coordination CATT discussion

10.2.6.4 Temporary capability restriction

Maximum 1 tdoc per company

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R2-1708575 Re-submission of Requirement to Capability Retrieval framework Vodafone, Deutsche Telekom, Nokia, Alcatel-Lucent Shanghai Bell discussion

P1

- LG thinks that the gNB doesn't need to send any response to the UE to confirm or reject. Vodafone think it is useful for the network to acknowledge and this could be a reconfiguration, and a reject could be a new message.
- Qualcomm think an explicit ack / nack is useful to avoid confusing with a reconfiguration sent for some other purpose.
- Intel think we already agreed network control as the eNB can indicate which capabilities can change. Also think there are different cases to be considered whether reconfiguration would be suitable to acknowledge the request.
- DOCOMO think the concern is that the network control is not captured in stage 2. And the details how it is done is stage 3.
- MediaTek agree that ACK NACK is useful and a NACK will likely cause UE to fallback to a UE implementation resolution of the problem.
- NEC think even after responding with an ACK, the timing of reconfiguration should be implementation but would be as soon as possible. Samsung think there are also cases where a reconfiguration is not needed. And we also need to think about the resumption of the original capabilities.

P2

- DT think it is important for the network to be aware of the cause.
- Intel think the cause should just be captured in stage 2 as it is not a testable requirement.
- Nokia think the UE knows the reason that it wants to do something and n stage 2 we need to conclude which use cases we allow. Intel agrees that the UE knows the reason but it is difficult to specify.
- ZTE agree we should have a single mechanism but think we can discuss more the content.
- Qualcomm wonders how the network can make decision based on the cause value. The UE will tend to use the cause that is more likely to be successfully responded.
- DOCOMO thinks if the mechanism is enabled then the network is responsible to respect the requests.

Agreements:
1: For Temporary change of UE capability, the gNB confirms or reject the temporary capability restriction request sent by the UE.
2 One single mechanism is defined to address all the use cases for temporary capability restriction.
3: The network can enable/disable the temporary capability restriction request mechanism.
FFS whether this temporary restriction mechanism is applicable for EN-DC

R2-1707836 Temporary NR UE capability restriction Qualcomm Incorporated discussion
R2-1709452 Assistance Information for Temporary Capability Restriction LG Electronics Inc. discussion
R2-1709444 UE temporary access capability restriction Huawei, HiSilicon discussion
R2-1707891 UE capability temporary restrictions CATT discussion
R2-1708011 Thermal Mitigation Provision for NR UEs MediaTek Inc. discussion
R2-1708033 UE Capability Restrictions Ericsson discussion
R2-1708153 Consideration on the Temporary Capability Restriction ZTE Corporation discussion
R2-1708415 UE radio access capabilities change vivo discussion
R2-1708788 Temporary capability restriction Intel Corporation discussion

10.2.6.5 Other

Any other aspect related to UE capabilities

R2-1707872 Measurement capability change in EN-DC Qualcomm Incorporated discussion
R2-1708034 UE Capability Compression Ericsson discussion
R2-1709445 Network handling on UE static access capability Huawei, HiSilicon discussion

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10.2.7 Mobility mechanisms - basic handover

Any remaining stage 2 aspects of 'basic' handover in SA and SCG change in NSA, including FFS points identified in the last meeting related to the beam/RACH resources used to access the target cell.

Including output from email discussion [NR-AH2#10][NR] TP on baseline handover procedure (Huawei)

Including output from email discussion [NR-AH2#11][NR] Baseline handover procedure (Ericsson)

R2-1708873 Text proposal to TS 38.300 on baseline handover procedure for inter gNB handover in NR
Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
=> Updated to capture the outcome of the other email discussion
=> Revised in R2-1709850 (Offline discussion #39)

R2-1709850 Text proposal to TS 38.300 on baseline handover procedure for inter gNB handover in NR
Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
=> Agreed

R2-1707860 Summary of the email discussion # [NR-AH2#11][NR] Baseline HO procedure Ericsson
discussion Rel-15 NR_newRAT-Core
=> Revised to R2-1709845

R2-1709845 Summary of the email discussion # [NR-AH2#11][NR] Baseline HO procedure Ericsson
discussion Rel-15 NR_newRAT-Core

Agreements relating to information carried between source and target node:
1: NR RRC specifications define a transparent RRC container (like the HandoverPreparationInformation message in LTE) to be transmitted from the source gNB to the target gNB as part of the Xn Handover Request message.
2.1 As in LTE, the HandoverPreparationInformation to be transmitted from the source gNB to the target gNB includes the UE capabilities for different RATs
2.2 As in LTE, the HandoverPreparationInformation to be transmitted from the source gNB to the target gNB can include the AS configuration, the RRM configuration and the AS context (including information necessary to handle handover failures). The details of the content of each IE are FFS.
3.1: The AS configuration includes the measurement configuration and radio resource configurations, UE identifier in the source, at least Antenna Info and DL Carrier Frequency.
FFS Whether the AS configuration includes the QoS flow to DRB mapping that was not configured to the UE via RRC signalling.
FFS Need to provide the system information from source equivalent to LTE's MIB, SIB-1 and SIB-2 (some checking of use of this in LTE to be done)
4.1: The RRM configuration can include at least the inactive time.
4.2: As in LTE, to support CA case, the RRM configuration can include the list of best cells on each frequency for which measurement information is available.
5 Available beam measurement information can be part of the RRM configuration of the HandoverPreparationInformation message if beam measurement information (i.e. beam indexes and optionally measurement results) have been configured by the source gNodeB to be reported by a UE. That information is not a mandatory part of the HandoverPreparationInformation message
FFS For which cell(s) beam measurement information can be included e.g. only candidate target cell.
6 The RRM configuration can include both beam measurement information (for layer 3 mobility) associated to SS Block(s) and CSI-RS(s) for the reported cell (or cells depending on outcome of FFS above) if both types of measurements are available.

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Agreements relating to content of handover command in RRC:

1 The NR RRC specifications define a transparent RRC container (like the Handover Command message in LTE) to be transmitted from the target gNB to the source gNB as part of the Xn Handover Request Acknowledgement message.

2 As in LTE, the handover command should be entirely generated by the target gNB.

FFS: Where there could be exceptions for that (e.g for MBB enhancement similar to that in LTE, if supported).

3 The mobilityControlInfo can contain at least the target physical cell identifier (or equivalent defined by RAN1), the carrier frequency, the T304 like timer and the new UE identifier (C-RNTI type of identifier).

4 RAN2 understanding is that the common RACH configuration for beams in the target cell can only be associated to the SS Block(s).

5 RAN2 understanding is that the network can have dedicated RACH configurations associated to the SS Block(s) and/or have dedicated RACH configurations associated to CSI-RS(s) within a cell.

FFS: The target gNB can optionally include the common RACH configuration in the mobilityControlInfo. If not included the UE continues to use the common RACH configuration of the source cell.

6 The target gNB is able to include one of the following RACH configurations in the mobilityControlInfo to enable the UE to access the target cell: i/ Common RACH configuration, ii/ Common RACH configuration + Dedicated RACH configuration associated with SS-Block or iii/ Common RACH configuration + Dedicated RACH configuration associated with CSI-RS. (List of options to be revised if common RACH is concluded to be optional based on above FFS.)
(Simultaneously including in the mobilityControlInfo a dedicated RACH configuration associated with SS-Block and a dedicated RACH configuration associated with CSI-RS is not supported.)

FFS Whether there will be a fallback procedure using common RACH when dedicated RACH fails.

=> Confirm with RAN1 that Antenna Info and/or DL Carrier Frequency are required to be included in the AS Configuration as in LTE.
=> Request RAN1 and RAN4 whether it is necessary to inform the UE in a handover the carrier bandwidth associated to the target cell and the additional spectrum emission.
=> Draft LS in R2-1709849 (Nokia, Offline discussion #38)

R2-1709849 [Draft] LS on Antenna Info and DL Carrier Frequency Nokia LS out
=> Approved in R2-1709955

R2-1708048 RACH during Handover MediaTek Inc. discussion

R2-1709129 Basic handover procedure considering beam LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1708587 On RACH resources during handover Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

- Discusses jointly with previous 2 papers.
- Huawei think the UE behaviour needs to be predictable and hence how the UE selects a good beam should be done with a threshold provided by the network. Further the procedure for beam selection should be specified.
- Ericsson agree there should be some predictability and some network control but can discuss a trade off.
- Intel think that current T310 provides some level of network control. The channel an change drastically since the MR provided to the network so it is more reasonable to leave it to UE implementation. Qualcomm agree with Intel and think a threshold is not a good approach.
- Vivo think the UE should have freedom to select the RACH resource for handover but we can make some rules.
- CATT also think a suitable beam criteria is the preferred approach.

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- Nokia explain the beams would just be ordered with respect to their measured signal quality, for example. Load conditions could also be taken into account. but agree the UE might have the most up to date information.
- Samsung think RAN1 is discussing beam selection for RACH (for general case not just handover case).
- ZTE would be ok to leave it up to UE. Due to beam forming it is not clear that the dedicated resources may not be the best.
- OPPO think predictability can be achieved by prioritising the dedicated RACH resources first.
- Lenovo think the most important thing is that the UE should not attempt on a poor beam.

=> Offline discussion to try to conclude. Can use the following text as a starting point (Intel, Offline discussion #50).

1 High level principle:
Dedicated RACH resources, if provided, are prioritised over common RACH resources.
The UE is not forbidden from attempting to access using common RACH resources before declaring HO failure based on T304 expiry.

- Update from offline:

✉ **[99#28][NR] Beam selection for HO access (Intel)**
Progress on beam selection for HO access including developing a TP for stage 2 and stage 3.
Intended outcome: Report and TPs for next meeting
Deadline: Thursday 2017-09-21

R2-1707857	Further details of handover execution in NR	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708226	On demand SI information at handover	NEC	discussion	Rel-15	NR_newRAT-Core
R2-1708366	Further discussion on open issues for RACH resource handling and usage during handover	OPPO	discussion		
R2-1708416	Basic handover procedure	vivo	discussion	Rel-15	NR_newRAT-Core
R2-1708470	SIB acquisition in connected mode and handover	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core
R2-1708577	Remaining open issues of the email discussion # [NR-AH2#11][NR] Baseline HO procedure	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708783	Random access procedure in NR	Intel Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708874	Multiple beam operation in handover	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708875	Beam selection during handover	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708876	Further discussion on information for basic handover	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708977	NR handover in multi-beam operation	Lenovo, Motorola Mobility	discussion	Rel-15	NR_newRAT-Core
R2-1709091	Beam aware RACH procedure and beam refinement during handover	Qualcomm Incorporated	discussion	Rel-15	

10.2.8 Mobility mechanisms - other

Note decisions at RAN2#97bis to progress the basic HO mechanism and only when stable to discuss conditional handover and potential optimisations to target close to 0ms or 0ms interruption.

R2-1707751	Mobility enhancements for NR	Samsung	discussion	Rel-15	NR_newRAT-Core
R2-1707752	Mobility enhancements for NR NSA	Samsung	discussion	Rel-15	NR_newRAT-Core
R2-1707753	Discussion on feasibility of DC-based mobility enhancement	Samsung	discussion	Rel-15	NR_newRAT-Core

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R2-1707762 Discussion on Conditional Handover Optimization OPPO discussion
R2-1707858 Enhancing Handover Failure Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707859 Conditional Handover Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707869 Ping Pong Issues for Conditional Handover TCL discussion NR_newRAT-Core
R2-1708002 Mobility Enhancement for '0ms Interruption' HO MediaTek Inc. discussion NR_newRAT-Core
R2-1708003 One or Multiple NR-Cells per MAC Entity MediaTek Inc. discussion NR_newRAT-Core
R2-1708004 QoS Flow to DRB Remapping during Handover MediaTek Inc. discussion NR_newRAT-Core
R2-1708028 0 ms interruption support in NR Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708029 RACHless HO in NR when UE is in CA or DC Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708119 Targeting a Lossless handover with 0ms interruption ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708120 Discussion on single connected handover ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708204 Intra-frequency DC to enable mobility with close to zero ms interruption AT&T discussion
R2-1708208 Automatic Neighbour Relation in NR Huawei, HiSilicon discussion Rel-15
R2-1708576 On Reliability, overhead and controllability aspects of Conditional Handover Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708586 Conditional handover – basic aspects and feasibility in Rel-15 Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708588 Dual connected intra-frequency handover for 0ms interruption and mobility robustness Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708680 PCI confusion issue Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708736 Conditional Reconfiguration for NR InterDigital discussion Rel-15 NR_newRAT-Core
R2-1708839 Operational aspects of conditional handover mechanism Samsung Electronics Romania discussion
R2-1708840 Introduction of UE autonomous handover Samsung Electronics Romania discussion
R2-1708841 Problem of DC enhancement for 0 ms interruption time Samsung Electronics Romania discussion
R2-1708877 DC based NR scheme for 0ms interruption handover Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708878 Security key change without L2 reset Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708879 3 Types of HO in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708880 DC for intra-frequency mobility in NR Huawei, HiSilicon, AT&T discussion Rel-15 NR_newRAT-Core
R2-1708881 Requirement of RACH procedure for mobility Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708882 Mobility enhancements for PCell change Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708883 Allocation of appropriate RACH resources for handover Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708884 Potential Advantages of multi-connectivity with multiple MAC entities within an NR cell Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708885 Inter MN handover without SN change Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708886 Further discussion on Conditional HO Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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R2-1708988 discussion of 0ms interruption handover for single Tx/Rx UE CMCC discussion Rel-15 NR_newRAT-Core
R2-1709067 Conditional handover in NR Lenovo, Motorola Mobility discussion Rel-15 NR_newRAT-Core
R2-1709128 ANR for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709130 Conditional handover procedure LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709238 Discussion on conditional handover KT Corp. discussion
R2-1709455 Enhanced RRC Connection Re-establishment in NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709481 Discussion on Conditional Handover in NRASTRI, TCL Communication Ltd. discussion
R2-1709484 Support of multiple MAC entities per cell Samsung Telecommunications discussion Rel-15
R2-1709602 The Necessity of T312 in NR Samsung Electronics discussion
R2-1709603 Conditional Handover: Event Design Aspects Samsung Electronics discussion
R2-1709604 Beam Refinement Considering RRM Measurement based on Idle Mode RSSamsung Electronics discussion

10.2.9 Mobility - RLM,RLF

Any remaining stage 2 aspects of radio link monitoring procedure and criteria for declaring radio link failure. RLC triggered RLF including the 2 identified FFS points from the last meeting will be progressed within the user plane session AIs 10.3.2.4 and 10.3.2.5..

Maximum 1 tdoc per company

R2-1708813 Beam failure and radio link failure handlings Intel Corporation discussion Rel-15 NR_newRAT-Core

P1

- Intel explain the new aspect with P1 is the 'periodic'. MediaTek think RAN is still discussing aperiodic indication.
- Samsung also support that this is periodic and think we were informed by an LS from RAN1. Vivo understand the aperiodic indication from RAN1 relates to beam recovery.
- LG wonder if there is a case of both periodic and aperiodic indications.

P2

Agreements
1 RAN2 understanding of RAN1 agreements that at least PHY informs RRC of periodic out-of-sync / in-sync indications.

2 Baseline behaviour when there are no indications from lower layers related to beam failure/recovery:
i/ RRC detects DL radio link problem if consecutive N1 number of periodic out-of-sync indications are received.
ii/ RRC stops the timer if consecutive N2 number of periodic in-sync indications are received while the timer runs.

=> Offline discussion to progress and to identify questions that can be asked to RAN1 to help us conclude (Samsung, Offline discussion #40)
- Update from offline in

R2-1709911 DRAFT LS to RAN1 on aperiodic indications based on beam recovery procedure Samsung LSout

=> Remove ‘triggering condition’ questions
=> Q3 change UE to L1
=> Q5.2 change be changed to something like "do the answers to the above depend on the RSs used"

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✉ **[99#17][NR] LS in RLM/RLF (Samsung)**
Intended outcome: Approved LS
Deadline: Thursday 2017-09-07

R2-1708692 RLF for NR (including TP for TS 38.300) Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1707775 RLM and RLF in relation to beam failure recovery NTT DOCOMO, INC. discussion Rel-15 NR_newRAT-Core
R2-1707854 Remaining stage-2 aspects of RLM and RLF in NR Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707892 Beam recovery and RLF CATT, CATR discussion Rel-15 NR_newRAT-Core
R2-1707998 RLM/RLF Considering Beam Failure Recovery MediaTek Inc., Qualcomm Incorporated discussion NR_newRAT-Core
R2-1708118 Consideration on the RLF and beam failure in NR ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708205 Beam Failure Events and Criteria for Declaring Radio Link Failure AT&T discussion
R2-1708417 RLM/RLF in NR vivo discussion Rel-15 NR_newRAT-Core
R2-1708737 RLM/RLF for NR InterDigital discussion Rel-15 NR_newRAT-Core
R2-1709020 NR RLM and RLF procedure Samsung Electronics Romania discussion
R2-1709185 Relation of beam failure and RLF Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1709454 Considerations for Beam Failure Recovery Indication LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

Wifthdrawn

R2-1708693 RLF with CA and DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
=> Withdrawn

10.2.10 Mobility without RRC involvement

AI is a placeholder for when RAN1 has made progress on beam management. Any RAN2 contributions should focus on the RAN2 implications as a consequence of RAN1 agreements - do not submit duplicates of RAN1 documents here.

R2-1707999 Beam Management and Beam Recovery in MAC MediaTek Inc. discussion NR_newRAT-Core
R2-1708000 Considerations on Beam Management Framework MediaTek Inc. discussion NR_newRAT-Core
R2-1708123 Consideration on CSI-RS for beam management ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708206 Beam management and indication AT&T discussion
R2-1708677 Beam Recovery in NR Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708678 Beam management Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708694 RAN2 aspects of UL beam management Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708695 RAN2 aspects of DL beam management Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708696 Consideration on DRX with beam management Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708697 Handling of resources for beam failure recovery Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708698 CSI-RS configuration for beam management Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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R2-1708814 RAN2 implications for beam managements Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1709004 Relationship and indication between NR Beam Recovery and RLF Samsung Electronics discussion
R2-1709070 Resource configuration for beam failure recovery Lenovo, Motorola Mobility discussion Rel-15 NR_newRAT-Core
R2-1709073 Random access for beam failure recovery Lenovo, Motorola Mobility discussion Rel-15 NR_newRAT-Core
R2-1709085 Beam recovery request Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709088 Measurement reporting and beam refinement during RACH Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709090 Beam refinement after beam recovery or scheduling request Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709223 Beam management and C-DRX operation Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709291 Beam link monitoring in NR Ericsson discussion Rel-15 NR_newRAT-Core
R2-1709300 Beam management in NR Ericsson discussion Rel-15 NR_newRAT-Core
R2-1709320 Discussion on beam recovery request in NR ASUSTEK COMPUTER (SHANGHAI) discussion NR_newRAT-Core
R2-1709587 NR beam recovery procedure Samsung Electronics discussion
R2-1709588 NR beamformed C-DRX operation Samsung Electronics discussion
R2-1709589 NR downlink beam management signals Samsung Electronics discussion

10.2.11 Mobility - Inter-RAT

Connected mode mobility between NR and E-UTRA

Including inter-RAT NR measurements to be added to E-UTRA for purpose of NSA operation as well as for the purpose of inter-RAT handover from E-UTRA to NR, including addressing the identified FFS points from the last meeting.

Inter-RAT E-UTRA measurements to be added to NR for the purpose of inter-RAT handover from NR to -E-UTRA can be discussed on 10.4.1.3.6

LTE measurements for EN-DC

R2-1708747 LTE Measurement Events for EN-DC InterDigital discussion Rel-15 NR_newRAT-Core

- Ericsson support adding event B2
- Intel also support the proposal and ask if NR serving cells would be provided to the MN.
- Vivo support the proposal

Agreements:
1: LTE inter-RAT measurement trigger event B2 for NR is supported

R2-1708021 Remaining issues for inter-RAT measurements from LTE to NR for both NSA and SA Ericsson discussion Rel-15 NR_newRAT-Core

P1

- Huawei think this is not just for the purpose of MN initiated SN release but could also be used for MN triggered SN change interfreq case. Nokia think that the event is not needed as load balancing case can be supported by B1. Samsung share Nokia view. Qualcomm also share Nokia view. LG assume that all SCell quality is included in measurement reporting and so the MN already has this information.
- Huawei think if SN doesn't provide measurement to MN then the MN must be able to get these measurements for load balancing case. IDC agree that the measurements are needed in the MN but a new event is not needed.

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- ZTE also agree with Nokia. Intel also agree with Nokia.
- Vivo think the event is needed.

Agreements for LTE inter-RAT measurements of NR
1 Beam measurement results can be configured by LTE eNB for EN-DC and inter-RAT handover from LTE to NR.

FFS Whether the LTE measurement report includes beam measurement results e encoded in LTE RRC format or NR RRC format.

2 NR measurement results are based on NR SSB for L3 mobility purpose

=> Consult RAN4 whether the existing measurement gap patterns are applicable for NR measurements are whether new patterns need to be introduced. Ask if there is any impact due to the NR SSB periodicity.
Consult RAN1/4 whether measurement gap configurations per frequency or per RAT need to be supported in LTE for inter-RAT measurement from LTE to NR.

R2-1709530 Draft LS to RAN4 on need of extending LTE measurement gap due to inter-RAT NR measurements Ericsson LS out Rel-15 NR_newRAT-Core RAN4

=> Revised in R2-1709855 (Offline discussion #41)

R2-1709855 Draft LS to RAN4 on need of extending LTE measurement gap due to inter-RAT NR measurements Ericsson LS out Rel-15 NR_newRAT-Core To:RAN4

=> Revised to R2-1709928

R2-1709928 Draft LS to RAN4 on need of extending LTE measurement gap due to inter-RAT NR measurements Ericsson LS out Rel-15 NR_newRAT-Core To:RAN4

=> Will not be sent.

R2-1708793 Serving cell reporting in EN-DC Intel Corporation discussion Rel-15 NR_newRAT-Core

- Samsung think this allows the MN to consider the NR cell signal strength for SN release purposes. Ericsson support the proposal
- CATT think the agreement should follow the previous agreement, This is different from LTE-DC.
- LG also think the proposal makes sense.
- OPPO support the proposal.
- Intel think the reporting would just be for the inter-RAT NR measurements.
- Huawei think that the SN serving cell measurements are useful for the MN.

Agreements
FFS Whether NR SN serving cell measurements are provided in LTE measurement reports.

R2-1708121 Discussion on requirement of measurement in E-UTRAN ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1707693 Discussion on LTE-NR DC measurement event FiberHome discussion

R2-1708408 Remaining on measurement event for EN-DC vivo discussion Rel-15 NR_newRAT-Core

R2-1708863 Inter-RAT measurement for EN-DC Fujitsu discussion Rel-15 NR_newRAT-Core

R2-1708899 NR cell measurement in LTE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1708907 Required reporting events for EN-DC LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709232 Inter-RAT NR Measurement Framework BEIJING SAMSUNG TELECOM R&D discussion

R2-1709251 Mobility events for EN-DC procedures Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

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R2-1709446 Measurement Events for LTE NR-DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Other

R2-1707853 UE context handling during inter RAT handover Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708699 Events and measurements for handover from E-UTRA to NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708887 Inter-RAT handover between LTE and NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708888 Message content in inter-RAT handover Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708925 Inter-RAT Inter-CN mobility between NR and LTE LG Electronics Inc. discussion Rel-15 NR_newRAT
R2-1708941 Inter-RAT Intra-5G CN mobility between NR and LTE LG Electronics Inc. discussion Rel-15 NR_newRAT
R2-1709231 Inter-RAT Mobility for MR-DC BEIJING SAMSUNG TELECOM R&D discussion
R2-1709236 Supporting Lossless Inter-RAT Handover BEIJING SAMSUNG TELECOM R&D discussion
R2-1709280 NR inter-RAT mobility to CSG cell LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709637 Mobility between E-UTRAN and NR Qualcomm Incorporated discussion

10.2.12 Slicing

How much slicing is visible to UE AS, partitioning of random access resources, separation of access control parameters, any impact to idle mobility, etc

Including output from email discussion [97bis#14][NR] Slicing (Xiaomi)

R2-1709158 Report of email discussion: [97bis#14][NR] Slicing Beijing Xiaomi Mobile Software report Rel-15

P2a

- Xiaomi think that SA2 have told us that the maximum number of slices per UE is 8

Agreements:
1 RAN2 understand that a network slice has a RAN part and a CN part. There is no concept of a RAN slice separate from the network slice
2 RAN2 targets that RAN solutions for network slicing should be able to support a large number of slices (e.g. hundreds of slices).
2a: Number of slices supported by UE in parallel is 8.
3 From UE perspective, the UE can be configured to support the requirements of the supported slices (e.g by appropriate configuration of different DRBs of different PDU sessions).
4 For intra-freq cell reselection the UE try to always camp on the best cell.
5 We will not support additional functionality for RACH resource isolation/differentiated treatment for slicing for Rel-15

Working assumption: For needs of slicing, appropriate configuration of the dedicated priorities provided from the gNB can be used to control the frequency on which the UE camps. (i.e. reuse of same mechanism as in LTE). (To be checked whether the gNB has knowledge of all the slices to which the UE is registered)
FFS: Whether any additional mechanisms are to be introduced for control of the frequency on which the UE camps

Idle mode behaviour

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R2-1709423 Demerits of using Slice information for Cell selection Lenovo Mobile Com. Technology discussion NR_newRAT-Core

R2-1707799 Slice availability Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708927 Slice Availability for Cell (Re-)Selection Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707893 Cell selection and re-seletion based on slice CATT discussion Rel-15 NR_newRAT-Core

R2-1707978 Cell Reselection Based on Slice Information Spreadtrum Communications discussion Rel-15

=> Revised in R2-1709331.

R2-1709331 Cell Reselection Based on Slice Information Spreadtrum Communications discussion Rel-15

R2-1708083 Idle mobility aspects to support network slicing Samsung discussion Rel-15

R2-1708109 Idle mode behaviour for NW slice ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708409 Cell selection/reselection with network slicing vivo discussion Rel-15 NR_newRAT-Core

R2-1708929 UE Awareness of Network Slice Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Signalling of slice info

R2-1709203 Slice assistance Information over RRC Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1707798 Signalling aspects of network slicing Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708110 Signalling of slice info for NW sliceZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708926 Further Discussion on Slice Selection Information over RRC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709205 Draft LS on RAN support for NW slicing Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1709303 AMF selection based on assistance information LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709509 NSSAI in MSG5 Sony discussion Rel-15 NR_newRAT-Core

Other

R2-1707758 Impacts of network slicing in RAN area Gemalto N.V. discussion

R2-1707800 Access control and resource isolation for slicing Ericsson discussion Rel-15 NR_newRAT-Core

R2-1707801 Separate RACH or not for supporting different services/slices Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708038 Discussion on Several Issues for Network Slicing OPPO discussion

R2-1708084 Connected mobility aspects to support network slicing Samsung discussion Rel-15

R2-1708928 What is RAN part of a network slice ? Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709167 Slice Awareness in Initial Access Samsung Electronics GmbH discussion

R2-1709168 Slice Information in RRC Samsung Electronics GmbH discussion

R2-1709202 Initial radio resource isolation for slicing Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

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R2-1709204 Stage 2 adjustment on slice assistance Information over RRC Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1709643 Support of Network Slicing in NG-RAN Qualcomm Incorporated discussion

Withdrawn

R2-1708652 NSSAI in MSG5 Sony discussion Rel-15 NR_newRAT-Core
=> Withdrawn

10.2.13 QoS

Any remaining stage 2 aspects, including QoS operation with DC including identified FFS points from last meeting.

Detailed topics should be discussed in stage 3 user plane

Note agreement at RAN2#97bis that QoS flow remapping at handover will be discussed when flow remapping not at handover has been progressed within user plane session.

QoS with DC operation

R2-1708410 QoS support in NR DC vivo discussion

P1

- Nokia think the SN should have a say in whether to give back flows to the MN.
- LG also have the view that SN should have a role
- Intel think the proposal is tha MN takes the final decision.
- Nokia thinks in DC the MN has to accept or drop the bearer if SN want to move it back.
- Vivo understands that SN may request a move back to MN but the MN makes the decision.
- Huawei agree with Nokia that MN must accept or drop the flow. Intel also agree with Nokia.
- OPPO also think that MN can reject the request.

P2

- CATT think QoS flow offloading implies a lot of specification impact and prefer not to support. DRB offloading is sufficient.
- Huawei thinks we have to support QoS flow level offloading to support a 1a like architecture as there are no bearers in the CN. Nokia also agree with Huawei. ZTE also agreed. OPPO also support.
- MediaTek support the view of CATT, it is a nice to have but not essential. Qualcomm also agree.
- Ericsson also support the QoS offloading and think the spec impact is not so bad.
- Intel think if we support lossless there will be spec impact but is we accept lossy then the impact should not be so much. Nokia think if it cannot be lossless then the benefits of 5G QoS disappear, and also think it is not so easy to specify.

Agreements:
1: SN can request to move a QoS flow(s) from SN to MN. MN can accept or drop the moved flow (but cannot reject the move)
2: QoS flow level offloading between the MN and SN is supported in NR.

R2-1708931 DRB level offloading in NR DC Huawei, HiSilicon discussion

R2-1707894 Discussion on QoS DC offloading CATT discussion

R2-1707985 QoS flow relocation from MN to SN Nokia, Nokia Shanghai Bell discussion

R2-1707986 Offloading granularity in NR-NR DC Nokia, Nokia Shanghai Bell discussion

R2-1708124 QoS remaining aspects for NR/NR DC ZTE Corporation discussion

R2-1708227 QoS flow offloading NEC discussion

R2-1708930 Further Discussion on QoS support in NR DC Huawei, HiSilicon discussion

R2-1709087 Remaining QoS issues in DC LG Electronics discussion

Other

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R2-1707983 QoS Framework Update Rapporteur (Nokia) discussion
- Samsung think it assumes that there is a default QoS profile .
=> Revised in R2-1709830 (Offline discussion #24)

R2-1709830 QoS Framework Update Rapporteur (Nokia) discussion
=> Agreed

R2-1708319 Draft Reply LS to SA2 on 5QIs for URLLC Ericsson LS out
R2-1707984 New QoS flow on the Default Bearer Nokia, Mediatek, Nokia Shanghai Bell discussion

Late

R2-1709671 Reflective QoS inactivity timer Samsung discussion Rel-15 NR_newRAT-Core

10.2.14 Positioning

Initial discussion of how to address positioning requirements now included in the WID, including consideration of what questions may need to be asked to other groups.

R2-1708601 NR support on RAT-independent and E-UTRAN-dependent positioning methods Ericsson discussion
-

Agreements
1 The full scope of LPP shall be supported by NR System Architecture and NR devices.
2 LPP messages are transported in NAS messages which in NR RRC (similar to LTE RRC).
3 Support for UTDOA method in NR may be revisited in further releases after further progress in SA2 work.

R2-1709478 Discussion of Positioning Support for NG-RAN in Release 15 Qualcomm Incorporated discussion

Agreements
1: Positioning network elements (UE, NG-RAN, AMF, LMF) in the positioning related architecture in TS 23.501 [2] should be used as the basis for positioning support for NG-RAN in Release 15.
2: TS 38.305 will define stage 2 positioning for NG-RAN for both NR and E-UTRA access.

R2-1709477 Skeleton for TS 38.305 Qualcomm Incorporated discussion
=> Endorsed

R2-1707895 Consideration on NR positioning in Rel-15 CATT discussion
R2-1708209 Positioning in NR Huawei, HiSilicon discussion
R2-1708210 Discussion on NR positioning technologies Huawei, HiSilicon discussion
R2-1708600 Network based NR CID and cell portion positioning Ericsson discussion
R2-1708602 Support of measurement gaps and idle periods for inter RAT measurements Ericsson discussion
R2-1709449 NR E-911 Location Services Needs T-Mobile USA Inc. other
R2-1709560 Basic positioning support in Release 15 for NR Nokia, Nokia Shanghai Bell discussion

10.2.15 Other

Other stage 2 aspects such as PWS, Security for SA, etc.

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Note security for NSA is treated under AI 10.2.5.

UE identities

R2-1707675 Radio network identities for NR Samsung discussion Rel-15 NR_newRAT-Core

Agreements
1 NR will support C-RNTI (unique within a cell) and A-RNTI (unique with an area larger than or equal to a cell). A-RNTI is longer than C-RNTI. A-RNTI is used to identify the node that holds the UE context and the UE context. FFS: Name A-RNTI.

R2-1708159 Text Proposal for Stage 2 on UE identities in NG-RAN Ericsson discussion Rel-15 NR_newRAT-Core
=> It should be clear that the section on identities is specific to NR radio access.
=> Revised in R2-1709868 (Offline discussion #42)

R2-1709868 Text Proposal for Stage 2 on UE identities in NG-RAN Ericsson discussion Rel-15 NR_newRAT-Core
=> Xx-RNTI to be used in place of ResumeID in other parts of stage 2 spec.
=> TP is agreed

Security

R2-1707802 Support of fake gNB detection mechanisms Ericsson discussion Rel-15 NR_newRAT-Core
=> Noted

R2-1708211 Discussion on fake gNB detection to reply SA3 LS Huawei, HiSilicon discussion Rel-15

R2-1707803 Draft Reply LS on support of fake gNB detection mechanisms Ericsson LS out Rel-15 NR_newRAT-Core SA3 RAN1, RAN4
=> Revised in R2-1709869 (Offline discussion #43)

R2-1709869 Draft Reply LS on support of fake gNB detection mechanisms Ericsson LS out Rel-15 NR_newRAT-Core SA3 RAN1, RAN4
=> Revised in R2-1709968

R2-1709968 Draft Reply LS on support of fake gNB detection mechanisms Ericsson LS out Rel-15 NR_newRAT-Core SA3 RAN1, RAN4
=> Remove " • Hash of the MIB/SIB is feasible to collect and report."
=> Approved in R2-1709980

R2-1708212 DRAFT Reply LS on Support for fake gNB detection mechanisms Huawei, HiSilicon discussion Rel-15

R2-1709614 Integrity protection and Counter Check Procedure for NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707804 Key refresh in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708411 DRB IP configuration and PDCP PDU Format vivo discussion Rel-15 NR_newRAT-Core

R2-1709501 Security procedure from RRC_INACTIVE state in NR SAMSUNG Electronics Co., Ltd. discussion

R2-1709611 Re-establishment upon integrity check failure Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709612 Draft LS to SA3 on reestablishement upon integrity check failure Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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PWS

R2-1708462 PWS support for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

Agreements
1 For NR, different NR system information blocks are defined for ETWS primary notification, ETWS secondary notification and CMAS notification.
2 Paging is used to inform UEs about ETWS indication and CMAS indication. UE monitors ETWS/CMAS indication in its own paging occasion for RRC_IDLE and RRC_INACTIVE. UE monitors ETWS/CMAS indication in any paging occasion for RRC Connected.
3 Paging indicating ETWS/CMAS notification triggers acquisition of system information (without delaying until the next modification period)

R2-1708157 Public Warning System in NR Ericsson, NTT DOCOMO INC., SoftBank discussion Rel-15 NR_newRAT-Core

Other

R2-1707856 TP on Radio Link Failure for 38.300 Ericsson discussion Rel-15 NR_newRAT-Core

=> Revised in R2-1709870 (Offline discussion #44)

R2-1709870 TP on Radio Link Failure for 38.300 Ericsson discussion Rel-15 NR_newRAT-Core

=> Agreed

R2-1707870 IETF ECN mechanism for 3GPP radio access technologies Samsung discussion Rel-15 NR_newRAT-Core

R2-1708158 Support for IMS Emergency calls in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708454 AS context in RRC_IDLE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1708485 Multiband and variable RX/TX support in NR Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1708507 Discussion on bandwidth part operation vivo discussion

R2-1708838 The feasibility of intra-frequency dual connectivity in NR-NR DC Samsung Electronics Romania discussion

R2-1708895 On supporting the supplementary uplink frequency Samsung discussion NR_newRAT-Core

R2-1708905 Speed dependent scaling of measurement related parameters LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709054 RLF Procedure for NR-NR Dual connectivity Samsung Electronics Romania discussion

R2-1709305 Supporting IMS Emergency services in NR LG Electronics Inc. discussion Rel-15 LTE_5GCN_connect-Core

R2-1709506 LTE-NR Coexistence Sony discussion Rel-15 NR_newRAT-Core

R2-1709514 User plane integrity check and RAN sharing Sony discussion Rel-15 NR_newRAT-Core

R2-1709575 Further discussion on Carrier Aggregation baseline in NR Samsung Electronics discussion

R2-1709576 RAN2 aspect on fast carrier switch Samsung Electronics discussion

R2-1709577 Needs of Fast Carrier Switch in NR Samsung Electronics discussion

R2-1709578 Indication signalling for uplink waveform Samsung Electronics discussion

R2-1709579 Reference waveform for uplink transmission Samsung Electronics discussion

R2-1709590 Identities of the NR-SS and CSI-RS for Beam and RRM Measurement Samsung Electronics discussion

R2-1709591 NR inter TRxP or inter DU mobility Samsung Electronics discussion

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R2-1709610 Support LTE Rel-14 eVoLTE for SA NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709613 Discussion on the support of SCG SRB for Intra-NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Late

R2-1709405 On RRC state mismatch issue in NR NTT DOCOMO INC. discussion Rel-15 NR_newRAT-Core

R2-1709691 Text Proposal for TS 38.300 on NR Radio Link Failure Sasmung discussion

R2-1709688 Text Proposal for stage 2 on L2 indication signalling of uplink waveform Samsung discussion

Withdrawn

R2-1708649 LTE-NR Coexistence Sony discussion Rel-15 NR_newRAT-Core

=> Withdrawn

R2-1708657 User plane integrity check and RAN sharing Sony discussion Rel-15 NR_newRAT-Core

=> Withdrawn

10.3 Stage 3 user plane

Documents in this agenda item will be handled in the NR user plane break out session

10.3.1 MAC

10.3.1.1 TS

Latest TS 38.321, rapporteur inputs, etc

R2-1709142 Correction to the random access preamble group range in NR LG Electronics Inc. discussion Rel-15 38.321 NR_newRAT-Core

=> Not treated

10.3.1.2 MAC architecture

Contributions on MAC modelling of PDCCH monitoring/TTI length

Note: specific issues related to CA (e.g. RAR, SR, DRX, etc.) and duplication should be submitted under the dedicated AI. Modelling of numerology/TTI length should be submitted under LCP

R2-1708187 PDCCH, CORESET and event-driven MAC Ericsson discussion Rel-15 NR_newRAT-Core

- Samsung thinks that event-driven works for some cases but not for all.
- Huawei shares the concerns with Samsung. Further, RAN1 has agreed to PDCCH monitoring occasions. Ericsson thinks that the main problem is when the coreset overlap in time. Samsung wonders if it is related to BWP. Ericsson thinks it may. InterDigital thinks that anyways we should specify the MAC in a forward compatible way.

=> Noted

R2-1708723 Timing Aspects in MAC InterDigital discussion Rel-15 NR_newRAT-Core

- Oppo thinks CORESET should be transparent to the MAC. IDC agrees but are just saying that the duration would be different depending on the coreset
- Ericsson thinks this can work but we need to think of the overlapping case.
- LG asks whether in NR we will have one unified timing unit or can we have the flexibility to use PDCCH occasion and some absolute timers. IDC thinks that using PDCCH occasions

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can make sense. Samsung thinks that we should align with RAN1. Vivo indicates that in LTE we didn't distinguish between ePDCCH and PDCCH.
- Ericsson thinks there are two options (can be considered case by case): PDCCH "occasions" and Absolute time

=> Details of timing unit are FFS.

=> Noted

Not treated

R2-1708085 Further details on indication for scheduling Samsung discussion Rel-15

R2-1708086 Draft LS to RAN1 on the time unit definition Samsung discussion Rel-15
R2-1708088 RAN2 considerations for bandwidth part in NR Samsung discussion Rel-15
R2-1708139 The PDCCH monitoring and TTI modeling ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1709254 MAC modelling of PDCCH monitoring and TTI length Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1709255 TP to 38.321 on MAC modelling of PDCCH monitoring and TTI length Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

10.3.1.3 MAC PDU format

Selection of MAC subheader format and length of L fields (from R2-1707492)

Contributions on further enhancements of MAC subheaders should contain stage 3 TP and justification/motivation. NOTE: MAC concatenation optimizations are not to be supported.

R2-1707735 The format of MAC subheader and optimization OPPO discussion
- ZTE thinks that we agreed to not optimize

=> Noted

R2-1708180 MAC sub-header format: Length field Ericsson discussion Rel-15 NR_newRAT-Core

Proposal 1 For MAC SDUs two length values are used for the Length field: 8 and 16 bits.
Proposal 2 For variable-length MAC CEs, the Length field is limited to 8 bits.

=> Noted

Discussion on Length field
- Samsung thinks the important discussion is on 7 or 8 bits and 8 bits should be supported. Ericsson and Huawei agree to 8 bits
- LG thinks that before agreeing we should discuss the E2 field and an explicit field should be used.

Agreements
- 8 and 16 bits length field is supported with the single F bit in the second bit. For fixed size MAC CE there is a two R fields

Not treated

R2-1708763 Remaining issues on MAC PDU format Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT
R2-1709148 MAC subheader format in NR LG Electronics Inc. discussion NR_newRAT-Core

R2-1708184 MAC PDU discard due to unknown MAC CEs Ericsson discussion Rel-15 NR_newRAT-Core

=> moved from 10.3.1.2

R2-1707683 Random Access in NR: RAR MAC PDU Design Samsung R&D Institute India discussion Rel-15 NR_newRAT-Core

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=> moved from 10.3.1.4.3

R2-1707927 MAC PDU for RAR CATT discussion Rel-15 NR_newRAT-Core
=> moved from 10.3.1.4.3

R2-1707929 The Lengths of L Fields in MAC Sub-header CATT discussion Rel-15 NR_newRAT-Core

R2-1708181 MAC sub-header format: Text proposal Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708262 Discussion on RAR MAC PDU format Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708263 Discussions on the L-field in MAC subheader Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708291 L-field length in MAC PDU format Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

R2-1709583 L field size for NR Samsung discussion Rel-15 NR_newRAT-Core

R2-1709584 Padding for NR Samsung discussion Rel-15 NR_newRAT-Core

10.3.1.4 Random access

10.3.1.4.1 Differentiation of RA parameters

Contributions on parameters that require differentiation and triggers. A converged solution on which parameters/triggers with a stage 3 TP is encouraged. NOTE: Need of different RACH configuration in support of different services/slices will be discussed in main/CP session

Priotization between RA procedures

R2-1707684 Random Access in NR: Service Differentiation Aspects Samsung R&D Institute India discussion Rel-15 NR_newRAT-Core

There is no need to support multiple RACH configurations (RACH resources and/or parameters) for service differentiation.

=> Noted

R2-1708720 Converged proposal on prioritized random access for NR Qualcomm Incorporated, AsusTek, CATT, Ericsson, Huawei, Intel, Interdigital, OPPO discussion Rel-15 NR_newRAT-Core

Proposal 1. NR should support prioritized random access across UEs based on service requirements or triggering events.

- ZTE asks what is service requirements and how many services are we expecting. ZTE understands that to differentiate you have to differentiate preambles. Qualcomm doesn't think we need to partition the preambles or differiantiate them.
- Lenovo asks how the UE knows QoS for UEs in idle mode and what triggers the RACH.
- IDC explains that this to provide operator means to differentiate power ramping and backoff without preamble partitioning
- Vivo supports differentiation by different events rather than service priority.
- Huawei explains that this is similar in a way to NB-IoT and other LTE cases, two different tables were defined. We should support it and then details can be discussed further.
- Xiaomi thinks this is related to slicing.
- LG explains that intention is to different events. For example, a UE in idle can be prioritized over UEs in RRC connected
- CATT explains this is not very complicated, it can be as simple as some UEs ignoring the BI. Nokia thinks BI is linked to congestion.
- ZTE thinks the eNB needs a way to know what type of data is making access. QC explains that the eNB doesn't need to know, it is a UE behaviour.
- Samsung thinks BI doesn't happen very often so not clear why we are trying to optimize. LG indicates that BI always happen.
- Mediatek is concerned that how the UE decided when the UE can differentiate can be complicated
- HTC asks if the gNB always need to send a backoff indicator. QC

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=> Noted

Options:
1. No differentiation of parameters (8)
2. Differentiation of parameters (backoff indicator and power ramping) (16)

Agreements
=> Differentiation of backoff parameter and/or power ramping will be supported. FFS in what conditions/events the differentiation will be supported. A TP should be submitted by next meeting

Not treated

R2-1707781 Prioritized Backoff of Random Access OPPO discussion

R2-1707926 Considerations on priority access CATT discussion Rel-15 NR_newRAT-Core

R2-1708142 Consideration on the RA parameters ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708191 Differentiation on RACH parameters Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708494 Stop SI request due to RRC connecition setup RACH vivo discussion

R2-1708764 Need for RA parameter differentiation or prioritization Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1708966 Differentiation for SR-triggered Random Access Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709082 Discussion on the differentiation of backoff indicator ITRI discussion NR_newRAT-Core

R2-1709153 Key factor for backoff parameter differentiation LG Electronics Inc. discussion NR_newRAT-Core

R2-1709256 Solution of RACH backoff differetiation Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709318 Discussion on random access for beam recovery request ASUSTEK COMPUTER (SHANGHAI) discussion NR_newRAT-Core

10.3.1.4.2 Random access in presence of multi-beam operation

Handling of RAR in the presence of multiple beam transmission, and other beam aspects related to random access procedure, e.g. power ramping, msg 4 reception, etc . Focus should be on RAN2 specific aspects. Contributions dependent on RAN1 progress will not be treated.

R2-1707680 Beamformed Random Access: Power Ramping Aspects Samsung R&D Institute India discussion Rel-15 NR_newRAT-Core

Proposal 1: Two counters PREAMBLE_TRANSMISSION_COUNTER and PREAMBLE_POWER_RAMPING_COUNTER are defined in MAC specification.

Proposal 2: MAC entity initializes PREAMBLE_TRANSMISSION_COUNTER and PREAMBLE_POWER_RAMPING_COUNTER to 1 when the Random procedure is initiated.

Proposal 3: MAC entity increments PREAMBLE_TRANSMISSION_COUNTER by 1 if RAR reception is not successful or contention resolution is not successful.

Proposal 4: MAC entity increments PREAMBLE_POWER_RAMPING_COUNTER by 1 if UE does notchange beam during PRACH retransmission.

Proposal 5: Adopt the changes in appendix 1 in MAC specification

- Vivo agrees with all proposals and is aligned with RAN1
- Panasonic agrees with all the proposals.
- Huawei asks if this is related to multiple preamble transmission. Samsung thinks we can assume that at least it is applicable to single.
- Ericsson thinks we can live with one counter and just not increment in when we transmit preambles in different beams.
- IDC agrees with the proposals, it helps the gNB control number of attempts
- HTC and Huawei supports two counters

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- Nokia is good with two counters but we can think of the modelling and MAC awareness. Vivo and Samsung think that the anyways the MAC needs to know.

=> Noted

Agreements:
For single preamble transmission case:
- Two counters PREAMBLE_TRANSMISSION_COUNTER and PREAMBLE_POWER_RAMPING_COUNTER are defined in MAC specification.
- MAC entity initializes PREAMBLE_TRANSMISSION_COUNTER and PREAMBLE_POWER_RAMPING_COUNTER to 1 when the Random procedure is initiated.
- MAC entity increments PREAMBLE_TRANSMISSION_COUNTER by 1 if RAR reception is not successful or contention resolution is not successful.
- MAC entity increments PREAMBLE_POWER_RAMPING_COUNTER by 1 if UE does not change “beam” for PRACH retransmission.

R2-1708049 RAR design supporting multiple preamble transmission MediaTek Inc. discussion

Proposal 1. If multiple RACH occasions are configured for contention-free RA, RAR window starts a fixed duration just after the end of the first RACH occasion.
- Ericsson and Vivo think that we should start it right away to avoid latency.
- LG asks if it is feasible for MAC to support multiple preamble transmission. LG explains that from MAC point of view there is a single transmission and RAR window is with respect to the last transmission.
- Huawei doesn’t think it should start right away.
- HTC thinks that from MAC perspective is like a single transmission.
- Vivo thinks this is different from MTC

Proposal 2: A single RAR window is applied for each consecutive preamble transmission on multiple RACH occasions.

Proposal 3: RAR carries explicit indication to distinguish PRACH resource and configuration. The explicit indication includes RA-RNTI and possibly some assistant fields in RAR.

Proposal 4: UE configured with multiple PRACH occasions is expected to receive one RAR in the RAR window. Once a RAR is received, UE terminates RAR reception.

Proposal 5: RA-RNTI formula includes carrier identity.

Proposal 6: RAR indicates the DL TX beam indices associated with the PRACH on which preamble transmission is detected.

Is the MAC aware of the multiple beam transmission?
- CATT thinks that if we have a single RAR this would only work for contention free. Samsung explain that the multiple RACH transmission occasions are only supported for contention free.
- CATT thinks that we should ask RAN1

When the RAR window starts
1. After the transmission of first preamble (e.g. the beginning of the procedure)
2. After every preamble transmission (e.g. sliding RAR window)
3. At the end of last preamble transmissions are completed

- Vivo asks how does the UE know it is the last preamble transmission. When you get there you consider a RACH failure.
- LG thinks that the first approach implies that the RAR window size would have to be bigger and that has impacts on RA-RNTI

Does the UE need to monitor multiple RA-RNTI
- Lenovo thinks we need to. Huawei thinks multiple RA-RNTI will increase decoding complexity.
- Ericsson thinks that if the UE transmits multiple different preambles then RA-RNTI is different. The question is what the UE does when it receives the first RAR. LG agrees as there may also be collision.
- Sharp asks if it is possible to decode multiple RAR with different RA-RNTI in the same subframe. Vivo says yes.

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- Intel thinks that even for single msg 1 transmission the UE may need to receive multiple RAR

What happens when the UE receives the first RAR?
- Once a RAR is received, UE terminates RAR reception

Agreements:
For multiple msg1 transmissions for contention free RACH - A single RAR window is applied for multiple msg1 transmission. - The RAR window is started after transmission of the first preamble after a "offset". - The UE monitors multiple RA-RNTIs. The RA-RNTI is associated to the RACH transmission occasion in which the preamble was transmitted. - Once a RAR is received, the RAR reception is considered successful, as in LTE. The UE stops multiple preamble transmission. - Details of RA-RNTI calculations are FFS

R2-1709788 LS to RAN1 on RAN2 RACH agreement Ericsson
- Include question on size of TA and UL grant for the RAR and preambles, HARQ process ID for msg 3
- Nokia asks if the temporary C-RNTI should be decided in RAN2.

=> Change Q4: What is RAN1's preferred size of the Temporary C-RNTI
- ZTE asks why we are asking about HARQ ID. Vivo thinks that a fixed process ID is sufficient
- Huawei thinks that maybe RAN1 would like to include it.

=> Delete "If not, RAN2 will decide on a HARQ process ID for msg3 transmission"
=> Add "field" at the end of Q2
=> Ask if RAN1 has agreed to add any additional fields?
=> The LS is approved in R2-1709800

Not treated

R2-1709062 Random Access procedure for multi-beam operation LG Electronics Inc. discussion NR_newRAT-Core
=> Not treated

R2-1708725 PRACH Resource Configurations for Beamforming InterDigital discussion Rel-15 NR_newRAT-Co

R2-1707679 Beamformed Random Access – Multiple Msg1 TXs Samsung R&D Institute India discussion Rel-15

R2-1707681 Beamformed Random Access: RA Resources for SI Request Samsung R&D Institute India discussion Rel-15 NR_newRAT-Core

R2-1707782 Multiple preamble transmission of RA OPPO discussion

R2-1708043 Power Ramping Control Modelling for beamformed RACH MediaTek Inc. discussion

R2-1708143 Consideration on the RACH procedure ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708192 On Multiple PRACH Resource Types in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708503 Clarification on the PRACH resource selection of multiple beams vivo discussion

R2-1708585 Beamforming impact on Random Access (and initial access) Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708724 Power ramping for Msg1 Preamble Retransmissions InterDigital discussion Rel-15 NR_newRAT-Core

R2-1708830 NR Random Access Multi-beam aspects Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708971 Beam aspects related to random access procedure Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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R2-1709081 The RAR for multi-preamble operation ITRI discussion NR_newRAT-Core
R2-1709257 RAR reception for multiple Msg1 transmissions Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1709398 MAC impacts on RA procedure in multi-beam operation NTT DOCOMO, INC. discussion Rel-15 NR_newRAT-Core
R2-1709422 Discussion on random access with multi-beam operations HTC discussion Rel-15 NR_newRAT-Core

10.3.1.4.3 Random access procedures

Contributions on further details of random access procedures, power ramping for msg1 transmission (with no beam forming), content of RAR and 4 contention resolution.

Stage 3 details of On-demand SI request.

R2-1708970 Content of RAR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Proposal 7: For UL asynchronous HARQ, RAR can indicate the HARQ process identity associated with the MSG3 retransmission.

- Nokia thinks this can be discussed in RAN1 when they discuss uplink grant.

=> Noted

Discussion on parameters:
- LG thinks T-CRNTI is not always needed. Huawei and Vivo also don't think this is need. QC prefers to keep RAR fixed size as it helps processing. Ericsson agrees. Lenovo also thinks it may not be needed but we should keep same principle as LTE and keep it there for processing. Panasonic and Samsung prefer fixed size RAR
- Vivo doesn't think we should have fixed RAR

Agreements:
- The following fields are always included in the RAR random access procedures: RAPID, UL grant, TA, Temporary C-RNTI for all cases other than msg. 1 SI request.
- BI can be included in msg. 2 as in LTE. UE behaviour with respect to backoff is the same as in LTE

R2-1708621 Random Access Procedure for On-Demand SI request Motorola Mobility España SA discussion Rel-15 NR_newRAT-Core

RRC triggers MAC to initiate Random Access procedure for the purpose of SI-request. For the case of msg1-based request procedure RRC indicates to MAC the PRACH preamble/resource.
- Huawei thinks that the resource is already provided to the UE with the other SI. Ericsson thinks that the information is terminated in the RRC.

Proposal3: RAN2 shall discuss the UE behaviour for the case that UE requests multiple different SI(s) corresponding to different PRACH Preamble(s).

- Ericsson ask if this is a possible scenario and configuring multiple preambles is expensive. E
- Lenovo thinks that we should specify the UE behavior.
- Samsung thinks that this should be handled by RRC, the RRC can do msg. 1 request per SI,

=> Noted

Agreements
1. RRC triggers MAC to initiate Random Access procedure for the purpose of SI-request. For the case of msg1-based request procedure RRC indicates to MAC the PRACH preamble/resource.
2. For msg. 1-based SI request MAC indicates to RRC the reception of acknowledgement for SI request
3. The UE is not expected to perform multiple mgs.1-based SI request RA procedures simultaneously. A single msg.1-based SI request will be performed at a time.

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4. For msg1-based request procedure, the RACH msg2 contains only the MAC PDU subheader for a RAR containing the Random Access Preamble ID field acknowledging the received PRACH SI preamble.

R2-1708193 MAC RAR PDU Design Ericsson discussion Rel-15 NR_newRAT-Core

Proposal 4 MAC PDU of RAR shall follow the MAC PDU format for DL and UL in NR.

- QC, Samsung, supports interleaving especially since we now have fixed. Nokia prefers the same as LTE
- Nokia asks about E bits
- Qualcomm suggests to add the BI in the front. Oppo asks how the UE will differentiate the two type of sub-headers.
- Qualcomm thinks that the SI requests are grouped together. CATT agrees.
- Ericsson thinks we need to reflect on the fact that we need to differentiate between response of SI-request and how a UE not doing SI request knows.

=> Noted

Agreements:
1. NR should support RAR multiplexing
2. MAC PDU of RAR shall follow the MAC PDU format for NR (interleaved MAC sub-headers). MAC sub-header details are FFS.
3. The BI is located in the front of the MAC PDU, as the first entry
4. FFS if SI request responses are grouped together

Not treated

R2-1708190 Parameters for Random Access Initiation Ericsson discussion Rel-15 NR_newRAT-Core

R2-1707685 Random Access Procedure for RRC INACTIVE State Samsung R&D Institute India discussion Rel-15 NR_newRAT-Core

R2-1709259 Discussion on non-contention based random access Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709323 Contention resolution for random access Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707928 The impact of On Demand SI on RA procedure CATT discussion Rel-15 NR_newRAT-Core

R2-1707682 Random Access in NR: RAR Contents Samsung R&D Institute India discussion Rel-15 NR_newRAT-Core

R2-1709005 Triggering/initiating Random Access Procedure in NR Samsung discussion Rel-15 NR_newRAT-Core

R2-1708418 Counter Design for Random Access Procedure vivo discussion Rel-15 NR_newRAT-Core

R2-1708493 Content of RAR in NR vivo discussion

R2-1708730 RACH Configuration in Handover InterDigital discussion Rel-15 NR_newRAT-Core

R2-1708765 MAC PDU format for RAR Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1708829 Remaining aspects for random access procedure in NR Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708967 Discussion on Power Ramping for NR Random Access Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709120 Enhancement for mitigating contention in random access Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

R2-1709143 Consideration on Random Access Response in NR LG Electronics Inc. discussion Rel-15 38.321 NR_newRAT-Core

R2-1709258 Selection of random access preamble in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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10.3.1.4.4 Other aspects related to RA

Not treated

R2-1707686 Random Access in NR – Flexible UE Bandwidth Aspects Samsung R&D Institute India discussion Rel-15 NR_newRAT-Core

R2-1708050 Support Initial Access on Supplementary Uplink MediaTek Inc. discussion

R2-1708968 Calculation of RA-RNTI Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708969 RAR in the RACH procedure of NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709260 Aspects on access procedure with multiple numerologies Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709261 Beam refinement during random access Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

10.3.1.5 SR

Details of SR procedures, including triggers, timers, cancelations and retransmissions.

Whether grouping of LCH to SR is needed and whether a LCH can be mapped to more than one SR configuration.

R2-1707736 Details of SR procedure OPPO discussion

=> Noted

R2-1708146 Consideration on the SR in NR ZTE Corporation discussion Rel-15 NR_newRAT-Core

=>Noted

R2-1709420 Discussion on LCG and SR configuration HTC discussion Rel-15 NR_newRAT-Core

Proposal 1: A logical channel can be mapped to at most one SR configuration.
Proposal 2: More than one logical channel can be mapped to the same SR configuration.
Proposal 3: When a logical channel triggers a SR, the UE should use the radio resources that are allocated in the corresponding SR configuration to transmit the SR.
Proposal 4: If more than one logical channel triggers a SR and the radio resources to transmit the SRs are allocated in the same TTI, the UE should transmit a SR for the logical channel with the highest priority.
Proposal 5: RAN2 should discuss which SR configuration should be used to transmit a SR when the SR is triggered by retx-BSRtimer.

=> Noted

Discussions:

Can the same logical channel be mapped to more than one SR configuration?

- Vivo thinks that one to one mapping is sufficient. Ericsson agrees.
- Nokia thinks we should follow LTE agreement where it is not restricted.
- Huawei thinks that if we allow the UE to be associated with multiple configurations there is no need to restrict.
- LG and Samsung also prefer one to one mapping.
- Nokia thinks that we should also handle single TTI duration and single numerology like in LTE. CATT thinks that we should at least be as good CA in LTE. Huawei supports
- Fujitsu thinks that we should allow multiple SR configuration.
- Ericsson thinks that one to one mapping is simpler. Nokia explains in LTE if the UE is configured with more than one SR the UE can transmit on any (the earliest occasion is chosen).
- IDC thinks that the network is smart enough to make sure the configurations are properly done.

Show of hands:

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1. A logical channel can only be mapped to a single SR configuration (12)
2. A logical channel can be mapped to more than SR configuration (12)

Triggers

SR-prohibit timers
One prohibit timers per SR configuration or one common one
- Nokia thinks that if we have a common procedure than we have one timer running. Vivo thinks that the URLLC SR should not be stopped because of an ongoing eMBB procedure.

- Futjistu thinks one is enough as the UE just needs one UL grant. Oppo explains.
- Nokia thinks that we can have different timers configured but a single one used.

drs-TransMax

SR Counter
Maintained per SR configuration or not
- Mediatek doesn't see why it is per SR configuration.

UE behaviour when SR Counter reaches max number

As in LTE, all pending SRs (no matter SR configuration) should be cancelled when a PDU is assembled including BSR, or the uplink grant can accommodate all the data available for transmission.

Agreements:
1. One or multiple logical channel(s) are mapped to SR configuration (e.g. not LCG)
2. RAN2 understanding is that numerology of the SR transmission need not be the same as the numerology of the LCH which triggered the SR
3. For the single-cell case, one single LCH is mapped to none or one SR configuration per BWP. This agreement is pending confirmation from RAN1 that a single BWP can support multiple SR configurations and understanding of how BWP is switched.

FFS how to handle SR configuration, mapping and transmission for CA case

4. sr-ProhibitTimer is independently configured per SR configuration. Whether a single timer or multiple timers are running at the same time are FFS.
5. *drs-TransMax is* independently configured per SR configuration. FFS whether *SR_COUNTER* is maintained for each SR configuration independently

Discussion after CBs
- *For the single-cell case, one single LCH is mapped to none or one SR configuration*
  - *This agreement is pending confirmation from RAN1 that a single BWP can support multiple SR configurations and finalization of how BWP is switched*
  - CATT think this should be single BWP
  - Nokia thinks that we should be talking about dual carrier. For single carrier the UE should not have multiple numerology as the UE will likely have only one active BWP on that carrier.
  - Convida thinks that to allow the fast switching you would need to have multiple SR configuration.

- *FFS the details of the design for the CA case (e.g. one-to-one mapping between LCHs and SR configurations where SR configurations belong to one of the cells; one-to-many mapping between LCHs and SR configurations where each of the selected SR configurations per LCH belongs to a different cell; one-to-many mapping between LCHs and SR configurations where each of the selected SR configurations per LCH belongs to a different cell and where the mapping is configured to appear to the UE as one-to-one mapping, etc.)*

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- *Send an LS to RAN1 to obtain clarification from RAN1 on whether a single BWP can support multiple SR configurations (all of them using the single same numerology of the BWP in question, but indicating 'requests' for potentially different numerologies), and if this is not possible, whether a single carrier can support multiple SR configurations*

R2-1709793 [Draft] LS to RAN1 on SR configuration per BWP Samsung
=> add "at a time" at the end of Q1
=> add "for a UE" at the end of Q2
=> Delete Q3
=> Change to: "As a reminder, in order to enable a closer match of transmission parameters (including numerology and expected latency) for the first PUSCH transmission to logical channel (LCH) requirements, RAN2 have agreed to support an early indication to the gNB of the type of traffic on the logical channel(s) triggering the SR, through the use of multiple, single-bit SR configuration(s). RAN2 has the understanding that the numerology of the SR transmission need not be the same as the numerology that the LCH which triggered the SR can be mapped to."
=> The LS is approved in R2-1709801 with the change above

Not treated

R2-1708266 SR procedure in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708197 SR failure handling Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708006 Handling absence of SR resource in NR Samsung R&D Institute UK discussion
R2-1708267 UE behaviour for the LCH with none SR configuration Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708789 Handling of multiple SR configurations Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1707737 Mapping logical channel to SR configuration OPPO discussion
R2-1707915 Discussion on SR CATT discussion Rel-15 NR_newRAT-Core
R2-1708007 Behaviour in case of multiple SR triggers and collision resolution Samsung R&D Institute UK discussion
=> Withdrawn
R2-1708008 SR timers Samsung R&D Institute UK discussion
=> Withdrawn
R2-1708009 On LCH-to-SR configurations mapping Samsung R&D Institute UK discussion
R2-1708044 SR design supporting multiple configurations MediaTek Inc. discussion
R2-1708146 Consideration on the SR in NR ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708196 Open questions for Scheduling Request Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708198 Text proposal for SR Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708265 Details on multiple SR configurations Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708490 SR and BSR cannel due to deactivation of LCH vivo discussion
R2-1708495 Enhanced SR in NR vivo discussion
R2-1708496 Discussion on the mapping between SR configuration and LCH vivo discussion
R2-1708726 SR Resource Configuration in NR InterDigital discussion Rel-15 NR_newRAT-Core
R2-1708766 Details of multiple SR configurations Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT
R2-1708865 SR procedure with multiple SR configurations Fujitsu discussion Rel-15 NR_newRAT-Core

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R2-1709083 Consideration on the SR in NR ITRI discussion NR_newRAT-Core
R2-1709121 SR configurations for URLLC service Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709151 Support of selective SR LG Electronics Inc. discussion NR_newRAT-Core
R2-1709173 Text proposal for Scheduling Request in NR (Option 1) Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1709176 Text proposal for Scheduling Request in NR (Option 2) Huawei, HiSilicon discussion Rel-15
R2-1709328 Consideration on multiple SR configurations ASUSTEK COMPUTER (SHANGHAI) discussion NR_newRAT-Core
R2-1709419 Discussion on details of SR procedures HTC discussion Rel-15 NR_newRAT-Core
R2-1709450 SR timers Samsung R&D Institute UK discussion
R2-1709466 Behaviour in case of multiple SR triggers and collision resolution Samsung R&D Institute UK discussion

10.3.1.6 BSR

Details of BSR formats (long/short/truncated).

R2-1707721 Flexible length BSR format Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
=> Noted

R2-1708349 BSR format aspects Ericsson discussion Rel-15 NR_newRAT-Core
=> *Noted*

Discussion on flexible BSR format
- Ericsson, Qualcomm, Lenovo, Vivo, ZTE, Oppo and Nokia think that the legacy LTE BSR are a good start
- Qualcomm thinks that the flexible TTI can increase the processing
- Intel thinks that it can help the scheduling
- LG, CATT would like a flexible BSR format.
- Samsung ask what is legacy. Nokia explains that at least long and short have to be support
- Nokia is flexible
- Qualcomm asks if it is ok that the number of LCGs to report is decided to before constructing the PDU. Intel agrees with QC. LG thinks that this will force the UE to transmit BSR even if there is no data at all. Samsung thinks that the cancelation of BSR can still take place.

Options for long BSR
1. fixed (5)
2. flexible (12)

Size of BS
- Nokia thinks that the BS size will be different for short and long. The most important is to keep the short size short and 8 bytes. Samsung doesn't think having two different size is not good. Mediatek agrees that the size of short should be 8. And fixed is good.
- Intel asks why we can't use the same BS size and just use one bit in sub-header to indicate.
- Huawei thinks that we should discuss at least long and maybe 8bits
- Qualcomm hasn't seen much motivation to increase the buffer size
- Huawei doesn't see any benefit to transmit the short BSR. Vivo thinks grant is limited, like msg. 3 for example. Nokia thinks for voice this is would be a big overhead. NTT Docomo shares the view
- LG asks whether we will use the same table for the BS for the two formats. Nokia thinks that the simplest is to use the same table and just drop some bits. Samsung thinks that this implies we can't report more than 1000 bytes.

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- LG thinks we should discuss truncated separately and maybe we have the possibility to transmit more. CATT supports that truncated maybe can be more bytes.

Agreements
1. 3 types of BSRs including Regular BSR, Periodic BSR and Padding BSR
2. Short BSR format of one byte is supported. Truncated BSR format of 1 byte is at least supported. Details are FFS
3. FFS on BS size and table
4. Flexible Long BSR format will be supported. The number of LCGs to report is decided before the PDU is constructed. BS information is the BS status after LCP. BS of 0 for some LCG can be reported.
5. BSR cancelation are FFS

R2-1707987 BSR Format Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT
=> Noted

R2-1707724 Design principle of BS table Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
- Nokia thinks we should follow the LTE way calculation which doesn't depend on RTT. The worst case is sufficient.
- Huawei thinks that we should have maybe two tables, like in LTE for different categories.

=> Noted

R2-1709789 [Draft] LS to RAN1 on max TB size Nokia LS
- Ask RAN1 about max TB size and other parameters (e.g. th number of carriers, RTT, and the granularity)

=> The LS is approved in R2-1709802

Not treated

R2-1709175 Data available for transmission in SDAP Beijing Xiaomi Mobile Software discussion Rel-15

R2-1707919 Discussion on BSR transmission and cancellation CATT discussion Rel-15 NR_newRAT-Core

R2-1708440 Adapting LTE baseline for BSR triggering to multiple SR configurations framework of NR Samsung R&D Institute UK discussion

R2-1707664 BSR enhancements with multiple numerologies SHARP Corporation discussion

R2-1707722 BSR procedure Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707723 TP for BSR procedure Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707725 BSR enhancement for SDAP Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707734 Draft LS on design of BSR table Huawei, HiSilicon LS out Rel-15 NR_newRAT-Core RAN1

R2-1707778 Discussion on BSR format OPPO discussion

R2-1707920 BSR MAC CE format CATT discussion Rel-15 NR_newRAT-Core

R2-1707988 Draft LS to RAN1 on Transport Block Sizes Nokia discussion Rel-15 NR_newRAT

R2-1708270 BSR design to support pre-processing MediaTek Inc. discussion Rel-15 NR_newRAT-Core

R2-1708348 Further aspects for BSR transmissions and cancellation Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708442 Text Proposal for TS 38.321 covering BSR operation in NR Samsung R&D Institute UK discussion

R2-1708491 BSR format in NR vivo discussion

R2-1708790 BSR enhancements Intel Corporation discussion Rel-15 NR_newRAT-Core

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R2-1709122 On BSR formats Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709123 On BSR cancellation conditions Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709149 BSR format with increased LCG LG Electronics Inc. discussion NR_newRAT-Core
R2-1709226 BSR for Multiple Numerology Operation BEIJING SAMSUNG TELECOM R&D discussion
R2-1709239 Truncated BSR Operation BEIJING SAMSUNG TELECOM R&D discussion
R2-1709240 NR BSR formats KT Corp. discussion
R2-1709524 Adapting LTE baseline for BSR triggering to multiple SR configurations framework of NR Samsung R&D Institute UK discussion
=> Withdrawn
R2-1709585 Discussion on BSR format Samsung discussion Rel-15 NR_newRAT-Core
R2-1709607 Potential Issues for BSR Latency Reduction Samsung Electronics discussion
R2-1708864 MAC TP for BSR Fujitsu discussion Rel-15 NR_newRAT-Core
=> Moved from 10.3

10.3.1.7 LCP

Contributions on modelling of abstraction of numerology/TTI based on profiles/index. Parameters needed to be included in the profile/index.

LCP in the presence of multiple grants (whether some grant prioritization guidelines need to be specified)

How the UE processes multiple UL grants and what parameters need to be visible to the MAC

Contributions should include TPs for their proposals

Including output from email discussion [NR-AH2#15][NR UP] LCP - MediaTek

R2-1709538 Email Discussion [NR-AH2#15][NR UP] on LCP MediaTek Beijing Inc. discussion

=> Noted

Discussion on TTI
- CATT thinks that we should get away from using the TTI terminology and see what makes sense in terms of parameters that make sense for channel restriction.
- IDC thinks the main problem is that RAN1 has defined a very flexible scheduling design and it is difficult to take the TTI too literally.
- Nokia thinks it refers to PUSCH duration given by the grant. Lenovo thinks that we need to distinguish of the time.
- QC thinks that it is the duration. Samsung points out that we need to discuss what needs to be taken into account for LCP and what can be visible to the MAC. Samsung thinks TTI means nothing anymore.
- Huawei thinks we should use a transmission duration.
- Mediatek ask what happens if the network schedules a short duration because there is less data. Lenovo thinks that when we take into account numerology we can infer. IDC thinks the problem here is that we are making a correlation between grant duration and QoS.
- Samsung thinks that it has to indicate something related to latency and not grant duration.
- CATT thinks that if latency is a key criteria we should take K2 into account.
- LG thinks that it is the interval of PDCCH occasion.

After comeback
=> Information from DCI is required to determine time line?
- Mediatek explains that for transmission profile with explicit DCI companies agree it works but some done like it. For implicit it is feasible/possible to determine the information from the DCI
- Mediatek thinks there are two options implicit and explicit information in DCI.
- QC, Nokia, Intel think that we should limit RAN1 impacts
- IDC thinks that if we list and discuss all parameters it will take a long time in RAN2.

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Parameters
1. Sub-Carrier Spacing
2. “time” information
3. K2

- Qualcomm thinks that transmission mode should be indicated grant free or dynamic. Mediatek thinks that it makes sense to restrict transmission of some logical channel for this type of transmission.
- Nokia thinks that it should be transparent and we agreed to treat them the same way. Huawei supports.

Agreements
1. LCH restriction is based on available parameters coming from PHY and/or RRC.
2. The physical layer parameters required by the LCP for the purpose of LCP restrictions are provided to the MAC from the PHY layer. How this is captured is FFS
3. Parameters for LCP restrictions - Sub-Carrier Spacing, Cell, “Time”. What “time” means is FFS (e.g. PUSCH transmission duration and K2). FFS if other parameters are required (e.g. transmission mode).
4. If there are multiple Grants for a UE at a certain point in time the order in which the UE processes the grants is up to UE implementation
5. The LCP restriction does not apply to MAC CE at least for non-duplication case

R2-1708047 NR LCP Modelling MediaTek Inc. discussion

- Lenovo doesn’t agree with the motivation and it is not future proof. Mediatek actually thinks that the index will make it future proof as the only think that needs to change is the table and you can add things later.
- Intel and Huawei think that we should discuss which parameters to consider.
- CATT thinks that we should support this abstraction.
- LG doesn’t see the motivation.
- Ericsson thinks that this will define the framework and the proposal from Mediatek is good and it is future proof.
- Qualcomm agrees with the abstraction and we don’t need to include all physical layer parameters.
- IDC agrees with TP and it is more future proof.
- Nokia doesn’t think it is needed
- Ericsson asks if with don’t have TP how is the mapping going to be done. Lenovo thinks that there is no mapping needed at all.
- Xiaomi prefers Mediatek’s approach as the UE may be configured with multiple configurations.
- Convida thinks that it is much simpler to just have an index to the MAC.
- IDC thinks that we agreed in the past that some form abstraction to the MAC was necessary.
- Mediatek doesn’t want to mention every parameter in the LCP directly.

=> Noted

R2-1708186 Prioritization between LCH and MAC CE Ericsson discussion Rel-15 NR_newRAT-Core

The network can configure the priority of a logical channel such that it has higher priority than the MAC CE for BSR, except for padding BSR.

- Qualcomm is concerned to give higher priority than BSR. The priority can be higher than PHR
- Lenovo agrees that there are some scenarios it could be beneficial to priority data over some MAC CEs in some situation
- Nokia thinks that the LTE baseline is sufficient. For URLLC the grant should be large enough. NTT docome agrees.
- Huawei thinks static priority is good enough
- LG also prefers to have a mechanism

=> Noted

Not treated

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R2-1709474 Logical channel prioritization and transmission profiles Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708728 LCH Selection in LCP based on Transmission Profiles InterDigital discussion Rel-15 NR_newRAT-Core
R2-1709126 Discussion on Identifying Numerology and TTI length for LCP Samsung Electronics discussion
R2-1708727 LCH Selection in LCP based on TTI Duration InterDigital discussion Rel-15 NR_newRAT-Core
R2-1708923 Issues related to segmentation in LCP Huawei, HiSilicon discussion NR_newRAT-Core
R2-1709473 Avoiding unnecessary padding for small grants Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707738 Modelling of the profile for LCP OPPO discussion
R2-1707739 Parameters in the profile for LCP OPPO discussion
R2-1707740 LCP for multiple grants OPPO discussion
R2-1707916 Consideration on the transmission profile CATT discussion Rel-15 NR_newRAT-Core
R2-1707917 Minimum Size of MAC PDU including Data CATT discussion Rel-15 NR_newRAT-Core
R2-1708101 LCP for grant-free transmissions MediaTek Inc. discussion Rel-15 NR_newRAT-Core
R2-1708144 Consideratoin on the tranmsission profile ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708145 Consideration on the LCP operation ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708622 LCP procedure for NR Motorola Mobility España SA discussion Rel-15 NR_newRAT-Core
R2-1708623 Prioritization/Mapping of MAC CE during LCP Motorola Mobility España SA discussion Rel-15 NR_newRAT-Core
R2-1708721 Dynamic priority for delay sensitive services Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1708729 LCP for LCHs with Multiple RRC Configured Mappings InterDigital discussion Rel-15 NR_newRAT-Core
R2-1708754 LCP restriction for MAC CE LG Electronics Mobile Research discussion NR_newRAT-Core
R2-1708823 LCP restrictions and modelling Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708824 UL grant processing order Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708896 Parameters considered for LCP Huawei, HiSilicon discussion NR_newRAT-Core
R2-1708910 LCP priority and procedure in NR Huawei, HiSilicon discussion NR_newRAT-Core
R2-1708913 Issues on multiple grants Huawei, HiSilicon discussion NR_newRAT-Core
R2-1708915 Detailed modelling on LCP in NR Huawei, HiSilicon discussion NR_newRAT-Core
R2-1708920 Text Proposal for LCP in NR Huawei Telecommunication India discussion NR_newRAT-Core
=> Withdrawn
R2-1708922 Text Proposal for LCP in NR Huawei, HiSilicon discussion NR_newRAT-Core
R2-1708924 Token Bucket accumulation for LCP Huawei, HiSilicon discussion NR_newRAT-Core
R2-1709034 Analysis of Skipping Segmentation Samsung discussion Rel-15 NR_newRAT-Core
R2-1709124 Order of transport blocks Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709127 Modelling of Abstraction-based Approach with Profile/Index for LCP Samsung Electronics discussion
R2-1709145 Multiple uplink grants handling for LCP LG Electronics Inc. discussion Rel-15 38.321 NR_newRAT-Core

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R2-1709147 Step 1 in LCP LG Electronics Inc. discussion NR_newRAT-Core

R2-1709227 Determining Value of X for LCP BEIJING SAMSUNG TELECOM R&D discussion

R2-1709233 MAC CE Processing for Multiple Grant Reception BEIJING SAMSUNG TELECOM R&D discussion

R2-1709286 LCP: handling multiple numerologies in NR using the 3-step procedure of LTE without modifications Samsung R&D Institute UK discussion

R2-1709287 LCP procedure support of URLLC traffic based on multiple UL grants III discussion

R2-1709565 Configuration for multiple numerologies SHARP Corporation discussion Rel-15 NR_newRAT-Core

R2-1709600 The Impact of Processing Order of UL Grants on LCP Samsung Electronics discussion

R2-1708264 Consideration on simultaneous multi-TB transmission Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

=> Moved from 10.3.1.3

10.3.1.8 SPS/Grant-free

Focus of discussions should be on details of UL SPS, with LTE functionality

RAN2 specific aspects of "grant-free" that may need to be discussed separately from SPS if sufficient progress in RAN1 has been achieved

R2-1707931 Further consideration on SPS CATT discussion Rel-15 NR_newRAT-Core

Proposal 1: Support multiple SPS transmission on PCell and PSCell.

- Huawei asks if this means that SPS means grant-free type 2 transmission

Proposal 2: Support SPS configuration and transmission on SCell.

- Nokia doesn't see a motivation to have SPS on SCell, on PCell it is enough. Samsung thinks that it can be useful because we may have different numerology configured on different cells.
- Nokia explains that it was not supported in LTE because PUCCH was on PCells.
- LG thinks that the UE can use just the SCell SPS.
- Huawei would like to understand what services are supported for SPS.
- QC thinks we should consider it in a later release
- Intel thinks that for the numerology restriction the network can just configure that cell as PCell
- Ericsson doesn't see a complexity associated to SPS and SCell
- Futjitsu thinks that for duplication we should have SPS on both cells. LG thinks that this SPS can be supported for other services other than voice
- Huawei thinks that there may some complication with the activation/deactivation mechanism. Ericsson thinks that it should work as defined with normal cases and we can just have the normal L1 activation. CATT thinks we should minimize impact. IDC thinks that one complication is how to acknowledge the activation/deactivation. OPPO thinks that we have a mechanism already in LTE V2X, so it's not too complicated.

=> Noted

Agreements

1. UL/DL SPS configuration can be configured and activated simultaneously on both PCell and PSCell
2. SPS can be configured for a SCell. FFS if it is restricted to a single configuration or can be allowed on multiple SCells.

R2-1708352 General HARQ aspects of SPS UL Ericsson discussion Rel-15 NR_newRAT-Core

Proposal 1 As in LTE SPS UL, retransmission for SPS UL transmission based on an UL grant is supported.. The UL-grant format in LTE is used as the baseline.

- Nokia thinks it is up to RAN1. UL-grant should be dependent on NR grant anyways.
- Vivo asks why we aren't discussing DL. Ericsson thinks the complexity is mainly in the UL but we can discuss the DL when we have papers.
- Huawei thinks we should wait for RAN1
- Samsung ask if there is a possibility that retransmission cannot be based on grant.

Proposal 2 As in LTE SPS UL, multiple HARQ processes for SPS UL are supported in NR.

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Proposal 3 *In SPS UL, a time T after an UL transmission on a HARQ process is configured to wait for a retransmission UL grant for the same HARQ process.*
- Vivo asks if there is a link with the drx retransmission timers
- Samsung also considers using some drx timers. Ericsson sees some form of commonality but we need to think especially if the values would be different.
- Lenovo asks why we need a timer since we have the grant to override the HARQ process. Ericsson explains that in the next SPS occasion there will be no explicit indication.
- LG thinks we need to study this further as there is a problem to address.
- QC prefers to have the same timers as HARQ RTT and retransmission timers.

Proposal 4 *If no retransmission UL grant is received within the time T, then UE considers the transmission successful and the HARQ process can be overwritten by new data.*

Proposal 5 *In SPS UL, HARQ PID is derived from UL SPS occasions, frequency resources and DMRS resources. In addition, the repetition is supported.*
- Nokia asks why we are basing it frequency resources and DMRS resources and not on time. Ericsson explains that it is because we don't know what "time" is, we should at least link UL SPS occasion.
- LG asks if it is possible to tie a HARQ ID with a slot in the configuration. Ericsson thinks that there would be a problem if the occasions are too close
- IDC says that there is another way to solve this by carrying PID on UCI.
- Samsung things that we need to be aligned as much as possible to the grant free.
- Oppo thinks that the repetition will introduce new problems that we need to address.

=> Noted

Problems to thinks about:
- HARQ identification for UL SPS with repetition and without repetion
- Do we always transmit new data on SPS occasions or not?

Agreements:
1. As in LTE SPS UL, retransmission for SPS UL transmission are based only on UL dynamic grant

R2-1708351 SPS enhancements in NR Ericsson discussion Rel-15 NR_newRAT-Core

=> Not treated

R2-1708141 Further consideration on the SPS/Grant free ZTE Corporation discussion Rel-15 NR_newRAT-Core

Proposal 4: *The periodicity of grant-free resources is UE specific and is configured individually for a UE.*

Proposal 5: *The start point of grant-free resources is UE specific, and UE can be activated to use grant-free resources individually.*
- Samsung asks if this is RRC or L1 activation. ZTE says RRC config

=> Noted

Can we configure the resources via broadcast signalling

Agreement
=> For UEs in RRC_Connected mode, resources for "Type 1" resources are configured by dedicated RRC signalling

Problems:
1. *When the UE starts using the resources – upon configuration, or a start time in RRC*
- Nokia considers that the UE can start right away and ambiguity period can be handled by Gnb
2. *What is required for this functionality*
3. *Naming of the UL transmission schemes*
- Ericsson thinks that we should re-think how we called it, and maybe "configured" grant is a more suitable word.

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- Huawei thinks that we should also re-think the naming of SPS, for example to grant-free. Ericsson thinks that from a MAC point of view the existing terminology “configured” grant would fit all schemes. LG points out that there is a grant so it cannot be grant free.
- ZTE thinks that we have used SPS for many years in the MAC so we shouldn’t drop it.
- Samsung points out that we also have DL SPS and we will keep the name so we can keep the UL as well. Huawei explains that RAN1 is not working on DL SPS
- Mediatek says that semi-persistent already refers to an RRC configured grant.
- IDC maybe thinks that RAN1 doesn’t think that there are so much impact so they haven’t spend much time.

Not treated

R2-1708856 Consideration on SPS resource control for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709264 Discussion on type 1 grant-free for connected mode UE Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709154 Collision control in use of grant free transmission LG Electronics Inc. discussion NR_newRAT-Core

R2-1709125 On reliable transmission of URLLC data Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

R2-1708767 Unified SPS and Grant-free operation Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1709262 Further discussion on the modelling of grant-free Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709228 Grant-free transmissions TCL Communication Ltd. discussion

R2-1708353 Enhanced HARQ feedback mode in SPS Ericsson discussion Rel-15 NR_newRAT-Core

R2-1707742 Support SPS on Scell OPPO discussion

R2-1707930 Grant-free transmission CATT discussion Rel-15 NR_newRAT-Core

R2-1708010 Considerations of SPS support on SCell and number of SPS configurations per cell group Samsung R&D Institute UK discussion

R2-1708350 Grant Free and Semi-Persistent Scheduling in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708486 UL grant-free resource configuration vivo discussion

R2-1708487 HARQ process for UL grant-free transmission vivo discussion

R2-1708488 Collision between grant-based and grant-free resources on the same UL carrier vivo discussion

R2-1708732 SPS and grant free operation InterDigital discussion Rel-15 NR_newRAT-Core

R2-1708956 Consideations on SPS and TTI-bundling in EN-DC. Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709150 SPS on SCell LG Electronics Inc. discussion NR_newRAT-Core

R2-1709235 Retransmission Aspects for Uplink SPS BEIJING SAMSUNG TELECOM R&D discussion

R2-1709263 Discussion on SPS and grant-free on Scell Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709608 Potential Issues for UL Transmision with Shared UL Grant among Multiple UEs Samsung Electronics discussion

10.3.1.9 HARQ

R2-1708194 HARQ operation Ericsson discussion Rel-15 NR_newRAT-Core

- Samsung sees similarity to their TP except that they are still using NR Unit
- IDC asks the pre-emption has any impact to the soft combining in the MAC. Ericsson thinks it should be handled in the PHY
- Nokia asks why multiple HARQ process(es). Ericsson is because of MIMO

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=> noted

R2-1709007 Baseline TP for DL HARQ procedures in the MAC specification Samsung discussion Rel-15 NR_newRAT-Core

R2-1709009 Baseline TP for UL HARQ procedures in the MAC specification Samsung discussion Rel-15 NR_newRAT-Core

- Npkia thinks we should check the details of UL

=> The proposals will be merged with the next revision that captures all agreements

=> Noted

R2-1708195 HARQ configurations in NR Ericsson discussion Rel-15 NR_newRAT-Core

- Nokia is not clear which values will be provided in DCI and which RRC

=> Noted

R2-1709270 Discussion on HARQ configuration in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709144 Asynchronous HARQ impact on the Msg3 LG Electronics Inc. discussion Rel-15 38.321 NR_newRAT-Core

=> Noted

R2-1709229 HARQ Procedure for URLLC-eMBB Multiplexing BEIJING SAMSUNG TELECOM R&D

=> Noted

10.3.1.10 DRX

Contributions on need for multiple DRX configuration/parameters should have a justification/motivation and stage 3 TP. Converged solutions are encouraged.

Details of DRX timers and how to handle them

R2-1708140 Consideration on the DRX ZTE Corporation discussion Rel-15 NR_newRAT-Core

Proposal 1: The long and short DRX cycle, ondurationTimer and drx-inactivityTimer are configured with numerology independent time unit, e.g. slot number of reference numerology.

- Samsung for long and short prefer to use suframe
- onduration and drx-inactivity is more related to monitoring PDCCH or number of monitoring occasion is a better

=> Noted

Onduration and drx-inactivity

- Nokia, Huawei, lenovo and CATT thinks ms is sufficient. Intel thinks that the units should be in time slot of reference numerology .
- QC thinks ms is too corse
- Lenovo asks what happens when the UE is configured with multiple numerology. Which monitoring occasions does it follow. LG thinks we would need some reference.
- IDC thinks that this is related to DL monitoring and should be in PDCCH monitoring occasion.
- Ericsson thinks ms is sufficient and we would end up with problems in case of overlapping coreset.
- Convida ask what happens if the numerology changes. Intel doesn't see a problem because it is a reference numerology. There is power consumption impact if the UE stays active for the whole onduration. IDC thinks that if it is common it cannot be tailored per service
- APT asks when the inactivity timer, when the DCI is received. Lenovo says that as long as the UE and gNB are aligned. APT asks, what about when multiple DCI are received.

Proposal 2: DL and UL retransmission timer are configured as PDCCH monitoring occasion numbers.

- Ericsson thinks it would be fine if there was not overlapping occasions so we may need to wait.
- Convida asks if this future proof and if we have more numerology.

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The RTT timer is configurable
- Ericsson and LG wants to remove the timers.
- Vivo thinks it needs to be there and configurable. QC further things that HARQ RTT enables UEs to do some power saving. Samsung and intel agree
- Nokia and CATT explain that the HARQ RTT timer is dynamic and signalled via DCI. Ericsson thinks the value zero should be allowed.
- Ericsson thinks that the K values signalled in DCI are not exactly the same as HARQ RTTI. R2-1707*630 is RAN1 LS with agreements.*

Agreements:
1. The unit of Onduration and drx-inactivity is numerology independent and based on ms. The minimum value can be less than 1ms. The values are FFS.
2. The long and short DRX cycles should be in ms.
3. FFS if HARQ RTT can or should be derived from dynamically signalled K parameters over DCI or if HARQ RTT is configured by RRC
4. HARQ RTT and DL/UL retransmission timers are dependent on numerology of corresponding scheduled transmission (FFS whether it is PDCCH/PUSCH/PDSCH). The actual unit is FFS (e.g. PDCCH monitoring occasions, number of slots/PDCCH slots, ms (last resort), etc.)
5. As in LTE, include functionality related to the MAC CEs DRX Command and Long DRX Command

R2-1708188 HARQ RTT timers and other open issues in DRX Ericsson discussion Rel-15 NR_newRAT-Core

R2-1709321 DRX Command MAC Control Element ASUSTEK COMPUTER (SHANGHAI) discussion NR_newRAT-Core

Proposal 1: As LTE, DRX Command MAC CE is supported in NR.

Proposal 2: UE will enter DRX and use the Short DRX Cycle upon reception of DRX Command MAC CE.

Proposal 3: If DRX Command MAC CE is received, DRX timers used to keep UE active are stopped. (e.g. Inactivity timer, onDuration timer, DL/UL Retx Timer)
- LG thinks that we need to stop UL but DL doesn't need to be stopped because it is not on
- Huawei thinks that the timer is HARQ specific so it can be on

=> Noted

R2-1708731 Impact of Bandwidth Part Activation/Deactivation on DRX InterDigital discussion Rel-15 NR_newRAT-Core

Proposal: The network can configure the UE to activate/deactivate bandwidth part using DRX timers (e.g. inactivity timer).
- LG asks if the BW part is visible from MAC point of view. IDC know what the UE is configured with. Samsung thinks as well, because it is related to coreset and coreset is linked to the PDCCH, so it is similar to PDCCH monitoring.
- Vivo thinks that the BW can be like a SCell. IDC thinks that carrier and BW are different things.
- Samsung supports switching the BW and can be related to an inactivity timer.
- Nokia would like to understand what the benefits are from power points of view. One disadvantage is that the scheduler is restricted to schedule in minimum bandwidth and not sure how long it takes to switch. IDC explains that main motivation in RAN1 was power saving and was studied there.
- Ericsson is not sure about how this BW works and is concerned in terms of time
- Intel asks what was agreed in RAN1. IDC says that RAN1 is discussing different mechanism and a timer is a potential mechanism and it would be nice that it is linked with DRX

=> Noted

R2-1709652 Wake-up signaling for C-DRX mode Qualcomm Incorporated, Apple, OPPO discussion Rel-15 NR_newRAT-Core'

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Proposal 1: NR supports both wake-up and go-to-sleep signalling in C-DRX mode by the method of advanced grant indication, which is special DCI that tells UE whether a grant should be expected in the upcoming DRX on duration.

- Mediatek thinks we have quite a few mechanisms already for power saving and we shouldn't focus on discussing this for NR. Samsung agrees and anyways this has RAN1 aspects

=> Noted

Not treated

R2-1709116	Wakeup signaling for multi-beam systems	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1708189	DRX with short on-duration and Wake-up signaling	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708897	Time unit and value range of C-DRX parameters	Samsung	discussion	NR_newRAT-Core	
R2-1708755	DRX related timers in NR	LG Electronics Mobile Research	discussion	NR_newRAT-Core	
R2-1707726	HARQ RTT timer	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1707727	Configuration for DRX parameters	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1707783	DRX timer unit	OPPO	discussion		
R2-1707918	Discussion on DRX Timers	CATT	discussion	Rel-15	NR_newRAT-Core
R2-1708087	Power saving for wideband carrier in NR	Samsung	discussion	Rel-15	
R2-1708492	Working assumption for Inactivity timer in UL SPS	vivo	discussion		
R2-1708756	Consideration for wake-up signaling	LG Electronics Mobile Research	discussion	NR_newRAT-Core	
R2-1708768	DRX for NR	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT
R2-1708791	C-DRX enhancement in NR	Intel Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708909	DRX Command MAC CE for NR C-DRX	Samsung	discussion	NR_newRAT-Core	
R2-1709012	DRX timer for SPS	Samsung	discussion	Rel-15	NR_newRAT-Core
R2-1709069	Enhancements on DRX configuration/parameters for NR	Potevio	discussion		
R2-1709115	Wakeup signaling for C-DRX mode	Qualcomm Incorporated, OPPO	discussion	Rel-15	NR_newRAT-Core
	=> Withdrawn				
R2-1709117	UE power saving during active state	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1709326	Numerology for PDCCH Monitoring during DRX Active Time	ASUSTEK COMPUTER (SHANGHAI)	discussion	NR_newRAT-Core	
R2-1709471	DRX Text proposal to TS 38.321	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1709649	Wake-up signaling for C-DRX mode	Qualcomm Wireless GmbH	discussion	Rel-15	
	=> Withdrawn				

10.3.1.11 Impact of PDCP duplication on MAC

MAC CE for activation/deactivation of PDCU duplication

Aspects related to fallback to split bearer and handling of RLC/PDCP entities during activation/deactivation should be submitted in AI 10.3.3.5

R2-1707921	Duplication activation/deactivation MAC CE	CATT	discussion	Rel-15	NR_newRAT-Core

Proposal 1: A duplicated DRB is RRC-configured with a primary leg which is always active irrespective of any received activation/deactivation MAC CEs.

- Huawei and OPPO thinks that the link selection can be included in the MAC CE dynamically

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- LG supports the CATT approach.
- Nokia thinks we already agreed last meeting
- Ericsson thinks dynamic switching should be supported
- Vivo thinks this is applicable to CA and we still need to discuss the FFS from last meeting on DC.
- Nokia thinks at least for CA we can agree to this. We agreed to not trigger RLF and if we dynamically change then we have to notify RRC as well.
- Ericsson thinks that for CA case it would be good to select the RLC entity that is not stuck. QC doesn't see an issue, RLC will have all carriers available to transmit.
- Samsung doesn't think that we need to specify any leg for CA. The leg on Pcel/l will be the leg that you keep.
- CATT thinks that we should just have one design and keep it simple

DC case

- Oppo thinks that if the UE is configured with split bearer and not threshold then the UE is stuck transmitting in the configured leg that may be stuck. NTT Docomo thinks that the network can take care by configuring the right prioritized path.
- ZTE is concerned that SRB doesn't support split bearer.

Proposal 4: The mapping between DRBs and the bitmap is configured by the RRC signaling of duplication configuration explicitly.

- Oppo thinks we may need to think about it and ensure that there is no ambiguity for DC.
- NTT docomo thinks that it is more future proof to add explicit signalling, when we have more scenarios.

Proposal 5: 1 byte bitmap could be used as duplication activation/deactivation MAC CE.

- LG asks how to map DRB ID with 8 bit. Oppo says it can be in order of configured duplicable DRBs. CATT doesn't see the need for more than 8.
-

Proposal 6: RAN2 adopts the duplication activation/deactivation MAC subheader and MAC CE as depicted in Figure 5 and Figure 6.

Agreements

1. For DC, when DRB duplication is deactivated via MAC CE, the UE falls back to the split bearer operation. Once de-activated we rely on split bearer operation and configuration.
2. 1 byte bitmap could be used as duplication activation/deactivation MAC CE
3. The mapping between DRB and the MAC bitmap is based on order of DRB ID(s) of the duplicate configured DRB(s)

=> Noted

R2-1707714 Link selection upon duplication deactivation Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

=> *Noted*

R2-1708769 MAC details on Duplication activation deactivation Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1707713 BSR procedure for data duplication Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707712 Design of MAC CE for duplicate activation/deactivation Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707715 Enhancements for DL Packet Duplication Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707741 Details of the duplication control MAC CE OPPO discussion

R2-1708100 MAC impact of duplication discard MediaTek Inc. discussion Rel-15 NR_newRAT-Core

R2-1708102 MAC CE design for duplication MediaTek Inc. discussion Rel-15 NR_newRAT-Core

R2-1708331 MAC CE duplication activation bitmap details Ericsson discussion Rel-15 NR_newRAT-Core

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R2-1708502	PDCP duplication impacts on LCP	vivo	discussion		
R2-1709029	MAC CE for Activation/Deactivation of PDCP Duplication	Samsung	discussion	Rel-15	NR_newRAT-Core
R2-1709096	Packet duplication with implicit SCell deactivation	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core
R2-1709102	Cell deactivation impacts on PDCP duplication	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709118	Impact of PDCP duplication on BSR in the CA case	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1709327	PDCP duplication and SCell (de-)activation	ASUSTEK COMPUTER (SHANGHAI)	discussion		NR_newRAT-Core
R2-1709629	MAC CE design for activation/deactivation of PDCP duplication	ITL	discussion		

10.3.1.12 PHR

PHR triggers, reporting, handling, for single and dual connectivity (i.e. without beamforming)

PHR in the presence of beamforming may be down prioritized and treated if RAN1 has made progress and if some input from RAN2 is needed.

Not treated

R2-1708199	Power headroom report in NR	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708200	PHR Text proposal	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1709267	Power management with multiple numerologies	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708645	PHR for NR CA	Motorola Mobility España SA	discussion	Rel-15	NR_newRAT-Core
R2-1708733	Power headroom reporting for NR	InterDigital	discussion	Rel-15	NR_newRAT-Core
R2-1708957	Consideration on PHR in EN-DC	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709013	PHR triggering events for NR	Samsung	discussion	Rel-15	NR_newRAT-Core
R2-1709014	Baseline PHR format for NR	Samsung	discussion	Rel-15	NR_newRAT-Core
R2-1709016	Draft LS on PHR details for NR	Samsung	LS out	Rel-15	NR_newRAT-Core
	RAN1, RAN4				
R2-1709063	PHR for multi-beam operation	LG Electronics Inc.	discussion		NR_newRAT-Core
R2-1709064	PHR for wider bandwidth operatio	LG Electronics Inc.	discussion		NR_newRAT-Core
R2-1709119	PHR for UL Split Bearer	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1709265	PHR reporting in different TTI lengths	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709266	Consideration on PHR with multi-beam operation	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709268	Consideration on PHR triggering and cancellation in NR	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709269	Content of the PHR	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709571	Guaranteed power for Power Headroom in EN-DC	Samsung Electronics	discussion		
R2-1709572	NR PHR for EN-DC	Samsung Electronics	discussion		
R2-1709573	PHR triggering event for beam change	Samsung Electronics	discussion		
R2-1709574	Extended PHR considering beam and TRxP change	Samsung Electronics	discussion		

10.3.1.13 Other

Other aspects not included in the detailed agenda items.

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Not treated

R2-1708185 Timing advance in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708965 Scell activation and deactivation in EN-DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709018 Text propsoal for a new clause for the handling of measurement gap Samsung discussion Rel-15 NR_newRAT-Core

R2-1709026 Handling of unknown, unforeseen and erroneous protocol data Samsung discussion Rel-15 NR_newRAT-Core

R2-1709146 Error handling in MAC LG Electronics Inc. discussion NR_newRAT-Core

R2-1709152 Initial state of Scell LG Electronics Inc. discussion NR_newRAT-Core

R2-1708045 Fallback mechanism for Bandwidth part operation MediaTek Inc. discussion

R2-1708911 On the TTI and Subframe in NR Samsung discussion NR_newRAT-Core

R2-1708912 [Draft] LS on the TTI definition Samsung discussion NR_newRAT-Core

R2-1708955 TP on Overall L2 consideration for EN-DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708959 Waveform modification in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709017 Time Unit for MAC operations Samsung discussion Rel-15 NR_newRAT-Core

R2-1709171 RAN2 consideration on user plane latency enhancement Samsung Electronics GmbH discussion

R2-1709271 CA activation and deactivation in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709272 Draft LS on CA activation delay of Scell Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709273 Consideration TA maintenance with multi-beam operation Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709274 RAN2 aspect of multi-TRP transmission Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709329 Discussion on Timing Advance in NR ASUSTEK COMPUTER (SHANGHAI) discussion NR_newRAT-Core

10.3.2 RLC

10.3.2.1 TS

Latest TS 38.323, rapporteur inputs, etc

R2-1708268 Text proposal for RLC AM polling mechanism MediaTek (Hefei) Inc. discussion Rel-15 NR_newRAT-Core

=> Noted

R2-1708347 RLC Specification State Variable Naming Ericsson discussion Rel-15 NR_newRAT-Core

- Mediatek explains that one of the principles was length of name
- Oppo thinks we can keep the existing spec

=> Noted

R2-1708844 Clarification on maximum data field size of a RLC PDU LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

- Oppo agrees but we shouldn’t have an actual number
- NTT docomo thinks we should apply the same concept for TM

=> The maximum data field size of a RLC PDU is the maximum size of PDCP PDU

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=> Noted

R2-1708866 RLC TP for prioritization Fujitsu discussion Rel-15 NR_newRAT-Core

10.3.2.2 RLC header format

Final details of RLC STATUS REPORT format (e.g. E1-E2 definition). Stage 3 TP should be provided

SN length for RLC UM

R2-1707744 RLC data PDU format OPPO discussion

Proposal 1 Use 6 bit and 14 bit SN for NR RLC UM.

- Intel thinks 6 bits is sufficient
- Huawei supports 6 and 14
- LG thinks more than 6 should be supported and 12.
- Mediatek thinks that 12 bits is needed for eMBB and we should have 6 bits
- Huawei thinks that if we have 12 we would have 2 R bits.
- ZTE thinks we should align with RLC AM. Huawei doesn't see how that helps it a different format anyways.

=> Noted

R2-1708343 RLC UM header format Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708772 RLC status report format Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1708292 Remaining RLC PDU formats Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

=> Noted

R2-1708847 RLC STATUS PDU format for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

=> Noted

R2-1707729 Further consideration on RLC status PDU format Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

=> Noted

Discussion

Confirm that byte alignment requirement in RLC status report applies to specific blocks within the RLC status report PDU separately.

- CATT doesn't see the need and we can have compact format like in LTE. Samsung agrees and it would force using some reserved bits.
- LG prefers to byte align.
- Mediatek points out that we don't have this in LTE and there is no strong need as we don't send them very often
- ZTE asks what the overhead could be. Nokia explains that the overhead wouldn't increase to much and it would help for UE processing.
- Ericsson thinks the overhead is quite insignificant.

Discussion on E1/E2 interpretation

- Oppo agrees with LGE that E1/E2/E3 can be combined
- Huawei agrees with E1 but has a different proposal E2
- Nokia asks if E1 is even needed given the byte alignment. Samsung explains that it is not really needed.
- Huawei thinks we don't necessarily always have SOend and SOstart together all the time. Mediatek sees this as an optimization as it works fine. Huawei is concerned with overhead and size of status PDU. Oppo thinks that in LTE we do the same and just set SOend and start to zero. Intel doesn't think this happens often and wonders if Huawei has analysed this.

NACK range

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NACK range field size is 8 bits or 10 bits based on the configured SN of 12 bits or 18 bits, respectively
- Nokia asks why we don't use more bits for the 18bits SN case. Samsung agrees with Nokia. LG thinks that it is not needed as at high data rates
- Oppo thinks we should use 12 bits

Where to put the NACK range
-

Proposal 4: A set of fields describing a set of consecutive RLC SDU and RLC SDU segments should be placed following the principle below:
- The first bit of NACK_SN should be the first bit of an octet in RLC status PDU format.
- The first bit of SOstart/SOend should be the first bit of an octet in RLC status PDU format.
- The first bit of NACK range should be the first bit of an octet in RLC status PDU format.
- The E1, E2 and E3 field is placed right after NACK_SN field.
- The NACK range field are placed right after SOend field When NACK range and SOstart/SOend are both present for a NACK.

Agreements
1. SN RLC UM size of 6 bits and 12 bits
2. Confirm that byte alignment requirement in RLC status report applies to specific blocks within the RLC status report PDU separately
3. The interpretation of E1/E2/E3 is not changed.
4. The NACK range is placed after SOstart/SOend
5. NACK range field size is 8 bits

Not treated

R2-1707730 RLC SN length for UM Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707743 Remain issues of RLC STATUS PDU OPPO discussion

R2-1707932 NR RLC status PDU format CATT discussion Rel-15 NR_newRAT-Core

R2-1708292 Remaining RLC PDU formats Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

R2-1708770 SN lengths for RLC UM Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1708771 Fixed and extension part in RLC PDUs Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1708825 RLC UM SN size Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708845 Remaining RLC field size for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1708846 RLC data PDU format for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709035 NACK SN Range and Detail in RLC Status Report Samsung discussion Rel-15 NR_newRAT-Core

R2-1707933 NR RLC UM SN Length CATT discussion Rel-15 NR_newRAT-Core

=> moved from 10.3.2.3

10.3.2.3 RLC UM operation

How to perform re-assembly (move receive window only or use timer). Stage 3 TP should be provided with each option.

R2-1708773 RLC UM window based vs. timer based operation Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

=> Noted

R2-1708261 Analysis of RLC UM operation for NR MediaTek Inc. discussion Rel-15 NR_newRAT-Core

=> Noted

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R2-1707731 RLC UM operation in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
=> Noted

Discussions
- ZTE asks what the problem is with storing a packet in the buffer for too long. Mediateks says because of SN ambiguity. Nokia explains that the SN will be incremented by 1 so it wouldn't happen.
- CATT thinks that the only benefit is to prevent a wrap around, but still we will be storing useless PDU for a long time and we shouldn't waste buffer. Intel doesn't think buffer is an issue, with HARQ this shouldn't happen only 1% of time.
- Samsung prefers to use only window.
- Huawei LG think it is simplest to just have a timer. Ericsson prefers to have a single timer and there is no benefit for more than one.
- Qualcomm and NTT Docomo would like to keep option 2
- Nokia thinks that 3 and 4 would have impact to the scheduler so we should focus on 1 and 2. Huawei, the same issue exists for PDCP and is handled.
- LG would like to avoid maintaining variables.

Agreements:
1. Window mechanism with a single timer is adopted. Baseline is gap based timer
2. T-reassembly timer terminology will be used

✉ **[99#35][NR UP] Reassembly for RLC UM - Qualcomm**
- Agreable text proposal

- Before next meeting

Not treated

R2-1707745 RLC UM operation OPPO discussion
R2-1707934 NR RLC UM receive operation CATT discussion Rel-15 NR_newRAT-Core
R2-1708338 Further details on RLC UM operation Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708339 RLC STATUS report format Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708826 RLC UM segment discard operation in NR Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708848 Multiple reassembly timers for RLC UM LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1708952 RLC UM operation Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709586 Text proposal for RLC UM transmit/receive operation Samsung discussion Rel-15 NR_newRAT-Core
R2-1709597 Window vs timer for RLC UM Samsung discussion Rel-15 NR_newRAT-Core

10.3.2.4 Impact of PDCP duplication to RLC

Whether RLF is triggered/reported when reaching the maximum number of retransmission for a PDCP duplicate leg and whether a re-establishment is triggered when a RLF on duplicate leg is reported.

R2-1708147 Consideration on the RLC Discard of Duplicated PDCP PDUs ZTE Corporation discussion Rel-15 NR_newRAT-Core
- Mediatek asks if this means that the PDCP just duplicates and no optimizations are needed
- QC understands that in main session they discussed that duplication for CA is down-prioritized for RLC AM

=> Noted

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R2-1708259 Impacts of PDCP Duplication to RLF Triggering When Reaching Maximum Number of RLC Retransmission SHARP Corporation discussion

RLF is not triggered when reaching the maximum number of retransmission for the duplicate RLC entity associated to SCell or Cell Group that PCell is not included

=> Noted

R2-1708849 Reaching maximum number of RLC retransmission with PDCP duplication LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

Even if the PDCP duplication is configured, when reaching the maximum number of RLC retransmission in an RLC entity, the UE triggers normal RLF or SCG-RLF depending on whether the RLC entity is the MCG-RLC entity or the SCG-RLC entity

=> Noted

Discussion

Whether RLF is triggered when maximum RLC tx reach on a logical channel restricted to a SCell on MCG

- Oppo doesn't thinks we should trigger RLF
- CATT thinks that the RLF should be triggered when the logical channel has a restriction on PCell
- Ericsson thinks that we don't need to do any changes, the max RLC retx can be configured up to 32 and the network can avoid triggering of RLF by setting the high number
- Nokia prefers to align with behaviour of CA and not trigger RLF
- Huawei thinks that the issue is whether the UE needs to perform re-establishment. We can report it like SCG-RLF and not trigger re-establishment
- Vivo thinks this is a rare case.

Agreements:
- RLC reports maxNumberofRLC retransmissions are reached to RRC.
- For a logical channel restricted to one or multiple SCell(s) (i.e. logical channel configured for duplication) UE reports the failure to the gNB (e.g. SCell-RLF) but no RRC re-establishment happens

Not treated

R2-1707716 RLF trigger for duplication transmission Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1707746 RLF on the duplication leg OPPO discussion

R2-1707771 Impact of duplication on RLC OPPO discussion

R2-1707922 Impact of PDCP duplication on RLC CATT discussion Rel-15 NR_newRAT-Core

=> Withdrawn

R2-1707923 RLC failure and RLF in CA CATT discussion Rel-15 NR_newRAT-Core

R2-1707989 Duplication impacts to RLC Nokia, Mediatek, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

R2-1708099 RLC impact of duplication discard MediaTek Inc. discussion Rel-15 NR_newRAT-Core

R2-1708259 Impacts of PDCP Duplication to RLF Triggering When Reaching Maximum Number of RLC Retransmission SHARP Corporation discussion

R2-1708340 TP RLC operation for PDCP duplication Ericsson discussion Rel-15 NR_newRAT-Core

=> Withdrawn

R2-1708346 Maximum Number of RLC Retransmissions in PDCP Duplication Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708867 RLC TP for duplication Fujitsu discussion Rel-15 NR_newRAT-Core

R2-1709027 Interaction between RLC Entities for PDCP Duplication Samsung discussion Rel-15 NR_newRAT-Core

R2-1709230 RLC failure handling in CA packet duplication KT Corp. discussion

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R2-1709498 RLC optimization for packet dupliation Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

10.3.2.5 Other

Including discussion on whether maximum ARQ retransmission is only criteria for RLC failure

R2-1708775 Pre-processing in RLC Nokia, Nokia Shanghai Bell, Ericsson discussion Rel-15 NR_newRAT

Proposal 1: *RLC PDUs are formed only when a transmission opportunity has been notified by lower layer, i.e. TX_next (if incremented) is only updated when the PDU is delivered to lower layer.*

- LG thinks that pre-processing has no more meaning. Nokia thinks that the UE can do the pre-processing up to UE implementation. Huawei agrees with Nokia and Ericsson.
- Intel thinks that this is limiting implementation options. Lenovo agrees and it was clear that we can do RLC PDU creation in advance. Samsung.
- Mediatek thinks that there is nothing broken
- Nokia explain that one concern is with the SN used by the UE.
- Samsung after attending the world class specification writing explains that the UE shall do what the specs says, so the spec should allow the room for pre-processing

=> *RAN2 can clarify UE requirement on PDCP discard and SN utilization*
=> Noted

R2-1707732 RLC status reporting issue Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Proposal 1: Set two timers (one timer is longer considering the segment issue and one is shorter consider only HARQ RTT), if the SN(RX_Next_Highest_Rcvd – 1) is a segmented SDU, start the timer with larger value; otherwise start the timer with smaller value.

- LG explains that observation 1 is not right and everything is great. The UE reports up to x-1.
- ZTE asks how often this happens
- Vivo considers that this can be solved by eNB implementation.
- Samsung thinks that there are different solutions

=> Noted

R2-1707733 Configuration of RLC timers Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

=> Noted

R2-1708345 UP timers in RLC Ericsson discussion Rel-15 NR_newRAT-Core

=> Noted

Discussion on additional values of timers

- Huawei thinks that new smaller values may be needed for some timers, e.g. t-reordering.

Agreements
1. Reuse the time unit of milliseconds and the current timing durations for the RLC timers *t-PollRetransmit, t-Reordering/t-Reassembly* and *t-StatusProhibit* in NR
2. At least the values in LTE are supported. FFS what other values may be needed

Not treated

R2-1707935 NR RLC AM operation and status reporting CATT discussion Rel-15 NR_newRAT-Core

R2-1708774 SO-based segmentation implication to RLC status reporting Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

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R2-1708179 ECN functionality in RLC and PDCP Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708341 RLC Polling TP Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708342 RLC Polling Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708344 RLC PDU creation Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707728 Approaches to specify RLC PDU pre-construction Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
=> moved from 10.3.2.1

R2-1708776 Clarification to the re-transmission operation Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT
R2-1708850 RLC SDU discard procedure in NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1708949 Further details of RLC Polling Procedure Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709598 t-reordering in RLC AM Samsung discussion Rel-15 NR_newRAT-Core
R2-1709661 Remaining issues for polling in NR RLC Huawei, HiSilicon discussion

10.3.3 PDCP

10.3.3.1 TS

Latest TS 38.323, rapporteur inputs, etc

R2-1708868 PDCP TP for BSR Fujitsu discussion Rel-15 NR_newRAT-Core
=> Not treated
R2-1709097 NR PDCP specification LG Electronics Inc. draft TS Rel-15 38.323 0.2.1 NR_newRAT-Core
=> The draft TS is endorsed

10.3.3.2 PDCP PDU formats

Remaining issues related to PDCP Data and Control PDU format

R2-1708326 MAC-I for DRBs Ericsson discussion Rel-15 NR_newRAT-Core
Proposal 1 MAC-I field is not present for a DRB for which integrity protection is not configured.
- Vivo thinks that the MAC-I doesn't haven't to always be provided and have a proposal on how to indicate on the PDCP header that the MAC-I is not present.
- LG thinks that this is a radio bearer configuration. Vivo is concerned about the case of re-configuration. Nokia explains that the integrity protection would be configured when we add a bearer .

=> MAC-I field is not present for a DRB for which integrity protection is not configured
=> Noted

R2-1708411 DRB IP configuration and PDCP PDU Format vivo
=> Noted

R2-1708960 Maximum length of PDCP data and control PDU Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
The maximum supported size of a PDCP SDU is 9000 bytes. The maximum supported size of a PDCP Control PDU is 9000 bytes
- Samsung 9600 bytes
- Ericsson asks why we can't just use 8188

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- QC asks about the SDAP header. LG thinks 9000bytes include it. Mediatek asks if encryption and integrity protection is done on SDAP. LG thinks it should be.

=> RAN 2 should send an LS letter to SA3, indicating that RAN2 is supporting 9kB jumbo frame and ask SA3 if there is a problem for their security algorithm to support the jumbo frame.

=> Unless SA3 raises some concerns, the maximum supported size of a PDCP SDU is 9000 bytes.

R2-1709792 [Draft] LS to SA3 on RAN2 agreements on jumbo frames Huawei

=> Change from 9kB - 9000 bytes

=> The LS is approved in R2-1709804

R2-1709056 PDCP control PDU length LG Electronics France discussion NR_newRAT-Core

=> In NR, PDCP status report length should be limited, same as maximum length of PDCP SDU length

=> Noted

R2-1708985 PDCP status report enhancement CMCC discussion Rel-15 NR_newRAT-Core

=> No support

=> Noted

R2-1709033 PDCP SN Size for UM Samsung discussion Rel-15 NR_newRAT-Core

=> Noted

10.3.3.3 PDCP receive operation

Contribution on how to handle out-of-order delivery. Stage 3 TP should be provided with proposals.

R2-1707711 TP on out-of-sequence delivery from PDCP OPPO, Nokia, Nokia Shanghai Bell, Sequans, Ericsson discussion Rel-15 NR_newRAT-Core

- LG asks why we added a note. Sequans explains it is about COUNT wrap around. LG doesn't thinks COUNT wrap around occurs. Sequans has seen it already in the draft specs.
- Ericsson thinks that that note is there to say that whatever falls out of the window after window moved up, the packets should be considered as received.
- Nokia and Oppo explains the behaviour of in-sequence delivery is not changed.
- Samsung it is important that we do not change the in-sequence delivery. We changed the state variable name.
- LG thinks that the only way to make sure that legacy behaviour is not impacted is to introduce a new variable
- Determine if there is impact to legacy procedure, whether we should introduce a new variable, and how to capture

=> Noted

R2-1709872 Support for out-of-order delivery in PDCP

=> we go for option 2

✉ **[99#36][NR UP] out-of-order delivery in PDCP – LG**

- agreeable TP to be presented in next meeting
- before next meeting

Not treated

R2-1709098 Support for out-of-order delivery in PDCP LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1708964 Update of RX_DELIV with disabled reordering Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708293 Out-of-order delivery in PDCP receive operation Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

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R2-1708686 SDU delivery at PDCP re-establishment for UM bearers Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

=> Upon PDCP re-establishment, for UM DRBs the receiving PDCP entity shall deliver to upper layers any stored SDUs previously received (like also done at PDCP-entity release).

R2-1709218 Discussion on PDCP re-establishment for UM DRBs LG Electronics France discussion NR_newRAT-Core

=> The changes in the TP are agreed

R2-1709101 Discussion to avoid duplicate reordering in EN-DC Samsung Electronics Co., Ltd discussion

R2-1709599 Outdated and duplicated PDU handling Samsung discussion Rel-15 NR_newRAT-Core

R2-1707707 Left issues on out-of-order delivery by PDCP OPPO discussion Rel-15 NR_newRAT-Core

R2-1708332 PDCP Out-of-order delivery and T-reordering Ericsson discussion Rel-15 NR_newRAT-Core

=> Withdrawn

R2-1708441 Discussion to avoid duplicate reordering in EN-DC Samsung Electronics Co., Ltd discussion

=> Withdrawn

R2-1708504 Issues on the PDCP packet reception vivo discussion

- QC thinks that the first proposal is useful for EN-DC
- Oppo thinks we should also consider:

Out-of-order delivery is configured only when the radio bearer is established. LG ask why. OPPO has done the same change as LTE.

- Ericsson thinks that there are ROHC that can work with out-of-order delivery.

=> Noted

Agreements

1. ROHC context continue is applied for AM DRB
2. The header compression should not be configured when out-of-order delivery is allowed for PDCP SDU.
3. Out-of-order delivery is configured only when the radio bearer is established (added to the field description of RRC)

R2-1708688 Discard of previously received PDCP PDU Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

UE does not discard a received Data PDU when it has previously received a PDU with same COUNT that was discarded.

- Samsung and LG don't think there is an a need for a change.
- Oppo thinks that it is safer to state this.

=> Noted

R2-1709061 Discussion on the duplicate detection in PDCP LG Electronics France discussion NR_newRAT-Core

=> Noted

R2-1708749 Alternative PDCP Receive Operation TP with updated RX_DELIV Sequans Communications, OPPO, Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

- Sequans thinks maybe we can think of changing the name.

=> RX_DELIV definition should be updated such as "new RX_DELIV = old RX_DELIV+1"

=> Noted

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R2-1708827 PDCP receive operation in NR Core Intel Corporation discussion Rel-15 NR_newRAT-Core
=> Noted

Not treated

R2-1709101 Discussion to avoid duplicate reordering in EN-DC Samsung Electronics Co., Ltd discussion

R2-1709599 Outdated and duplicated PDU handling Samsung discussion Rel-15 NR_newRAT-Core

10.3.3.4 UL data split

Impact of UL data split to specification. Stage 3 TP should be provided

R2-1708148 Consideration on Path Switching in NR NR_newRAT-Core ZTE Corporation discussion Rel-15
=> *Noted*

R2-1709660 UE autonomous UL direction change NR_newRAT-Core NTT DOCOMO, INC. discussion Rel-15
=> Noted
On autonomous and dynamic UL change
- LG doesn't support anything
- Huawei supports using dynamic MAC CE to change similar to the duplication case.
- Vivo thinks that with autonomous UL change we can increase performance.
- NTT Docomo explains that in the case of beam forming and blockage we cannot use MAC CE
- Samsung and CATT thinks it's nice to have but we have limited time to work on this.
- Oppo also supports the dynamic change with MAC CE
- IDC supports NTT Docomo especially when there is high probability of blocking on a link
- Mediatek has some sympathy but the first priority is to have a method of switching using RRC configuration.

R2-1708946 PDCP UL switching Qualcomm Incorporated, Broadcom, MediaTek Inc. discussion Rel-15 NR_newRAT-Core
- Nokia thinks that the Rel-13 behaviour is sufficient. We can use a value set to infinity and the UE will always chose the signalled path.
- Lenovo ask what happens when you switch and what do you do with the data. Qualcomm considers the transmission on the other leg. Lenovo asks what about buffer status reporting. LG explains that in Rel-13 we just change the path and we keep the RLC going.

=> A UE with split bearer can be configured to transmit on a single path via RRC signalling.
=> Noted

R2-1707936 PDCP routing for split bearer CATT discussion Rel-15 NR_newRAT-Core
=> *Noted*

R2-1708334 PDCP pre-processing and data delivery to lower layers Ericsson discussion Rel-15 NR_newRAT-Core
=> Noted

R2-1708777 NR UL data split operation NR_newRAT-Core Sequans Communications discussion Rel-15
=> Noted

R2-1709099 PDCP PDU submission to lower layers NR_newRAT-Core LG Electronics Inc. discussion Rel-15
=> Noted

R2-1708953 pre-processing for UL split Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

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=> Noted

Discussion on allowing the PDCP to provide data to lower layers before request from lower layer
- Qualcomm thinks that we should remove the threshold from the data submitting part and keep it only from BSR
- Lenovo thinks that we have already decided
- Lenovo thinks that there are ways to restrict bad behaviour, one is buffer limit and one is adding a note.
- Oppo ask how we would calculate data volume
- Nokia explains that we can still pre-process without moving the data, just pre-process headers. Intel thinks that this is up to UE implementation.
- Ericsson doesn't think the note can prevent bad behaviour as it is informative. LG has seen it before.
- Nokia is concerned with split bearer case.
- Huawei and Oppo agree with Nokia
- Mediatek thinks that the amount of data pre-processed should be relatively small and we don't need to change data volume calculation
- Ericsson thinks that we should at least limit the amount of data.
- Nokia has a similar concern to the RLC with the SN. This is related to a PDCP SN that you allocated and gave it to the RLC for submission but it was not transmitted.

=> The UE is allowed to pre-process data for split bearer before a request from lower layers is received and is allowed to submit to lower layers before a request is received. A restriction on bad UE behaviour or a requirement on proper behaviour will be added. FFS how to capture it (e.g. capture how avoid bad UE behaviours related to which PDCP SN are sent to the RLC and not transmitted at the end and whether and how to capture a pre-processing limit)

Not treated

R2-1708498	Discussion on the PDCP data volume	vivo	discussion		
R2-1708644	Threshold for NR UL split bearer	Motorola Mobility España SA	discussion	Rel-15	NR_newRAT-Core
R2-1708687	PDCP trigger for uplink splitting	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core
R2-1708689	Submission of PDCP PDUs to lower layers for UL split bearer	Nokia, Nokia Shanghai Bell, Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708778	Limited LL buffering for NR UL data split	Sequans Communications	discussion	Rel-15	NR_newRAT-Core
R2-1708798	UL data split in NR	Intel Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708962	PDCP PDU pre-construction for UL split	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709448	TP for PDCP UL transmit operation	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1709656	Threshold for UL split	LG Electronics UK	discussion	NR_newRAT-Core	

10.3.3.5 PDCP duplication

Whether fallback to split bearer is supported/allowed. How to handle PDCP/RLC/MAC entities during activation/deactivation of duplicate bearers.

Not treated

R2-1707717	UE behaviors upon deactivation of DC duplication	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708951	PDCP duplication	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core

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R2-1707718 RLC behaviors upon duplicate deactivation Huawei, ASUSTek, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1707924 PDCP Status Report for Duplication CATT discussion Rel-15 NR_newRAT-Core
R2-1707982 Initial State of PDCP Duplication Nokia, Mediatek, Nokia Shanghai Bell discussion Rel-15 NR_newRAT
R2-1707990 Duplication impacts to PDCP Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT
R2-1708017 Aligned duplication support for DRBs and SRBs Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708335 Dynamic reconfiguration of UL link direction Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707708 PDCP operation for UL packet duplication OPPO discussion Rel-15 NR_newRAT-Core
R2-1707719 PDCP operation for packet duplication Huawei, ASUSTek, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1707720 PDCP data volume calculation for packet duplication Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1707925 Duplication Bearer Type CATT discussion Rel-15 NR_newRAT-Core
R2-1708017 Aligned duplication support for DRBs and SRBs Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708098 Data duplication in NR MediaTek Inc. discussion Rel-15 NR_newRAT-Core
R2-1708329 PDCP and RLC behavior for PDCP data duplication Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708336 PDCP data volume reporting in duplication Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708337 PDCP duplication control related to SCell control Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708444 Discussion on PDCP data volume calculation Samsung Electronics Co., Ltd discussion
R2-1708508 Layer-2 behaviors of PDCP duplication activation deactivation vivo discussion
R2-1708573 Packet duplication during the handover PANASONIC R&D Center Germany discussion
R2-1708624 PDCP packet duplication Motorola Mobility España SA discussion Rel-15 NR_newRAT-Core
R2-1709032 PDCP Duplication Operations Samsung discussion Rel-15 NR_newRAT-Core
R2-1709061 Discussion on the duplicate detection in PDCP LG Electronics France discussion NR_newRAT-Core
R2-1709100 Packet duplication in PDCP LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709241 Text Proposal on PDCP Data volume indication to MAC Samsung Electronics Co., Ltd discussion

10.3.3.6 Other

Not treated

R2-1707709 PDCP version reconfiguration OPPO discussion Rel-15 NR_newRAT-Core
R2-1708327 PDCP SN reconfiguration at handover Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708328 PDCP feedback and flow control Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708330 UP timers in PDCP Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708505 UL path change conditions for split bearer vivo discussion
R2-1708947 Moving Reordering Window at NR PDCP Qualcomm Incorporated, Fujitsu, Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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R2-1708948 Further details on moving reordering window Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1708961 Solutions for SN gap issue due to PDCP discard Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708963 Support for UL-only RoHC in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1709030 PDCP SDU Size for NR Samsung discussion Rel-15 NR_newRAT-Core
R2-1709031 ROHC Reset at PDCP re-establishment Samsung discussion Rel-15 NR_newRAT-Core
R2-1709057 PDCP configuration for SRB LG Electronics France discussion NR_newRAT-Core
R2-1709177 PDCP discard Beijing Xiaomi Mobile Software discussion Rel-15
R2-1709352 Separate configurations for UL and DL PDCP SN lengths HTC Corporation discussion
R2-1709375 Header compression in reflective QoS HTC Corporation discussion

10.3.4 QoS layer

10.3.4.1 TS

Latest TS 37.324, rapporteur inputs, etc

Incoming LS

R2-1709848 Response LS on default DRB establishment for PDU session
- Sharp asks is the QFI for reflective QoS flow completely different for non-reflective

=> Noted

R2-1709569 Draft TS 37.324 v011 Rapporteur (Huawei) draft TS Rel-15 37.324 0.1.1 NR_newRAT-Core
- Samsung is concerned that in 4.2.2 it sounds like we have multiple SDAP entity per PDU session. Huawei explains that there are a SDAP entity per CG.

Do we have one SDAP entity or two in case of DC
- LG thinks it is different SDAP entities.
- Nokia thinks that the SDAP should not care about CG.
- Huawei explains that for split bearer there is a single SDAP, but for 3A there is two, as agreed in main session
- Samsung thinks that two SDAP entities in the network side doesn't mean two on the UE side.
- Nokia thinks from the UE perspective it is important that there is only one otherwise it is difficult to handle the QFI and default bearers. The important is that the info is aligned.
- LG wonders how the QFI to DRB mapping is handle since DRBs are different in each cell group, so it should be separate SDAP entities.
- Vivo also thinks that there should be only one SDAP in UE

=> FFS if a single SDAP entity is present in the UE for DC case. An editor's note will be added in the next revision
=> The draft TS is endorsed

R2-1709072 Corrections on SDAP architecture and functionality LG Electronics discussion NR_newRAT-Core
- Huawei thinks first change not needed as it is captured that SDAP is per PDU session

One QoS flow for the PDU session is mapped onto only one data radio bearer.
- Mediatek thinks that the procedure text already takes care of in the spec
- Nokia thinks that we shouldn't have such restriction in the network. The RAN can be smarter and chose.
- QC indicates that we already agreed during the SI. Huawei thinks that the consequence of allowing more is that we would have to add reordering functionality in the SDAP layer.
- Samsung agrees with Nokia as some of these configuration can be up to network implementation.

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- Convida thinks that it can be complicated on how to set the bit when you have two DRBs for the same flow.
- CMCC agrees with the proposal and we should keep the system simple.
- Oppo agrees with Huawei

=> For UL, one QoS flow for the PDU session is mapped onto only one data radio bearer at a time
=> The procedure in 4.4 should only focus on the function and not mention headers
=> Noted

R2-1707991 SDAP TS Updates Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT
=> Changes 2 and 10 will be taken care of in the next revision of TS
=> Noted

R2-1708506 Text Proposal for SDAP data volume calculation vivo discussion
R2-1709074 Discussion on default DRB establishment in DC LG Electronics discussion NR_newRAT-Core

10.3.4.2 Header Format

Details of header format only. Presence/need of fields and handling of re-mapping should be discussed in Other AI

R2-1707673 QoS layer header format Samsung discussion Rel-15 NR_newRAT-Core
=> *Noted*

Options for header
- *fully static SDAP header;*
- *semi-static SDAP header (with a mandatory part and optional part);*
- *fully dynamic SDAP header (the whole header can be absent).*

- TCL supports the semi-static SDAP
- Intel thinks that if we a single byte then it would be static

Size
- LG indicates that SA2 hasn't studied. TCL thinks we should wait for SA2.
- CATT thinks we should use the indicated size from SA2.
- Xiaomi thinks that we should first decide that it is lower than one byte.
- Ericsson thinks we should chose a value, like 6 and tell SA2.
- Samsung would like to ensure that we are future compatible.
- Convida thinks we should first discuss whether we need two RQIs or one is sufficient.

Agreements
1. RAN2 aims at designing a 1 byte SDAP header. Whether the QFI is 6 bit or 7 bits is FFS.
2. If configured, SDAP header size for a DRB is static (assuming 1 byte header). The QFI will always be present.
3. No SN will be introduced in SDAP

Not treated
R2-1708934 Use of Shorter QoS Flow ID Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1709377 SDAP configuration aspects Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707747 SDAP header format OPPO discussion
R2-1707937 SDAP header format CATT discussion Rel-15 NR_newRAT-Core
R2-1707992 Reflective QoS indication to UE Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

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R2-1708125	Discussion on the SDAP PDU format	ZTE Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708324	SDAP Header Format	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708932	SDAP Header Format	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708933	QoS Flow ID in SDAP	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708945	SDAP PDU format	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1708986	SDAP header format optimization	CMCC	discussion	Rel-15	NR_newRAT-Core
R2-1709059	Location of QoS Flow ID in UL and DL packet	LG Electronics France	discussion		NR_newRAT-Core
R2-1709066	SDAP header format	LG Electronics	discussion		NR_newRAT-Core
R2-1709084	Discussion on SDAP header format	ITRI	discussion		NR_newRAT-Core
R2-1709525	SDAP Header Format	Convida Wireless LLC	discussion	Rel-15	NR_newRAT

10.3.4.3 Other

Discussion depends on the answers from SA2

QoS flow remapping within the same cell. Aspects related to handover can be progressed after same cell remapping is more stable.

R2-1708318 Default DRB establishment Ericsson discussion Rel-15 NR_newRAT-Core

Proposal 1 gNB provides always QFI to DRB mapping explicitly to UE either with dedicated RRC signaling or with AS reflective QoS mechanism.

Proposal 2 Default DRB is not defined for PDU session.

- Samsung thinks the default is used for the case in which there is no QoS flow to DRB.
- If standardized QFI are used there is no N2 signalling so we cannot agree with the proposal.
- Asustek thinks that there is the case of pre-configuration so its possible the UE doesn't have QoS flow to DRB.
- Ericsson thinks that we can just provide the N2 signaling for those cases as well.

=> Noted

R2-1708832 DRB properties with 5G QoS Intel Corporation discussion Rel-15 NR_newRAT-Core

Proposal #1: It shall be possible to configure certain DRBs to use only explicit RAN mapping (no RAN reflective mapping).

- LG thinks the mechanism to configure transparent SDAP header mode is sufficient.

Proposal #2: It is proposed that the AS mapping for a QoS Flow is released when the NAS mapping for a QoS Flow is deleted (using NAS procedures).

- Nokia asks how the gNB is made is aware of this.
- QC asks if this is in the UE side. Intel explains that basically the UE deletes just the mapping. QC asks what happens when there is data again in the UL. Intel there is no NAS to AS mapping anymore.
- Huawei thinks that the two should not be linked
- Samsung asks if there is a problem. Intel explains that there is a NAS reflective mechanisms that a rule is released when the timer expires.

=> Noted

R2-1708937 Reflective Mapping in AS Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Proposal 2: The RAN controlled and UE controlled deactivation could be used to deactivate the reflective mapping.

- Nokia the AS doesn't need to have any mechanism for UE controlled deactivation
- Ericsson doesn't think we need any either. Huawei sees signalling overhead optimization.
- Mediatek thinks there are different ways and no additional mechanism are needed. LG thinks RAN should always control it.

=> UE controlled AS reflective mapping deactivation is not supported

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Proposal 3: The Source gNB should transfer the current QoS flow to DRB mapping applied in the UE to the target gNB during handover procedure.

- Oppo thinks the target gNB should be responsible to make the decision and context doesn't need to be transferred.
- LG thinks target gNB should know the mapping to avoid doing re-mapping

=> The Source gNB should transfer the current QoS flow to DRB mapping applied in the UE to the target gNB during handover procedure

=> Noted

R2-1708260 SDAP header design for reflective QoS indication and QoS flow remapping MediaTek Inc. discussion Rel-15 NR_newRAT-Core

Proposal 1: The indication to update AS Reflective QoS mapping rule and NAS Reflective QoS mapping rule are provided by separate fields in DL SDAP header from the gNB.

- Samsung thinks that one bit is sufficient
- CATT thinks that if we have 6bits QFI then we can use two bits, but otherwise we can live with one.
- TCL doesn't think it is needed, if we have an extra bit we would rather keep it reserved.
- Nokia thinks that the only drawback is that we cannot support asymmetric mapping, but it is not the end of the world.
- Convida sees the second bit as an optimization and 1 bit would be sufficient.
- Mediatek thinks it has to be an update for both as the UE is not aware of which rule was updated
- Huawei and CATT thinks that it should be only for NAS and AS can be updated by RRC signalling
- Qualcomm thinks that if the NAS rules have not changed the NAS timer shouldn't be updated. Mediatek thinks we can just let the NAS decided

=> Noted

Agreements:
1. *Working assumption*: One bit, RQI, to indicate update of mapping rule(s)
2. RAN should be able to move/remap a QoS flow from one DRB to another DRB

=> Send LS to SA2

- RAN2 agreements on SDAP header
- Indicate to SA2 that RAN2 has a preference to keep for a QFI of 7bits or 6bits, up to SA2 to make the final decision
- RAN2 thinks that one bit can be sufficient to indicate update of mapping rule, and explain consequence.
- RAN2 can as if SA2 has a preference for the QFI

R2-1709799 [draft] LS to SA2 on QoS layer Mediatek

=> remove the word "either"

=> The LS is approved in R2-1709803

R2-1707674 Re-configuration scenarios for the NR QoS framework Samsung discussion Rel-15 NR_newRAT-Core

=> Noted

R2-1707993 QoS Flow Relocation Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT

- MEdiatek thinks that we should just be concerned with out-of-order
- TCL small number of lost packets are not a big issue
- Nokia thinks that it can be likely that the first packet may be stuck in the default DRB quite often
- Ericsson thinks we don't need to address it but if we do we should consider a very simple solution
- Xiaomi prefers to address this issue
- Samsung and Oppo think it may not be a big issue.

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- ZTE thinks that it is not an essential issue

=> Noted

Not treated

R2-1707779 Discussion on QFI awareness OPPO discussion

R2-1707780 QoS flow remapping OPPO discussion

R2-1707867 QFI Presence for AS Level Reflective QoSTCL discussion NR_newRAT-Core

R2-1707868 Solutions for Flexible QFI Presence for AS Level Reflective QoS TCL discussion NR_newRAT-Core

R2-1707938 How to update the mapping rule of reflective QoS CATT discussion Rel-15 NR_newRAT-Core

R2-1707939 QoS re-mapping of QoS flow and DRB CATT discussion Rel-15 NR_newRAT-Core

R2-1707979 Consideration on Default QoS Spreadtrum Communications discussion Rel-15

=> Withdrawn

R2-1708126 Discussion on QoS flow-DRB remapping ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708127 Discussion on reflective QoS ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708290 SDAP header configuration Sharp Corporation discussion Rel-15 NR_newRAT-Core

R2-1708320 QoS Flow Relocation in NR-DC between MN and SN Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708321 QoS Flow Remapping in Handover and Within the Same Cell Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708322 Reflective QoS and Flow-ID Ericsson discussion Rel-15 NR_newRAT-Core

=> Withdrawn

R2-1708323 SDAP entity establishment Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708325 SDAP configurations with NAS-Reflective QoS Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708500 Discussion on the configuration of SDAP vivo discussion

R2-1708501 Draft LS on NAS AS interaction for SDAP entity vivo discussion

R2-1708935 QoS flow level offloading in NR-DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708936 Further Discussion on NAS Reflective QoS Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708938 QoS Flow to DRB Re-Mapping Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708939 Lossless Handover of QoS Flow Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708940 Notification Control Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708984 QoS flow ID presence in the AS Reflective QoS CMCC discussion Rel-15 NR_newRAT-Core

R2-1708987 Further consideration on AS reflective QoS CMCC discussion Rel-15 NR_newRAT-Core

R2-1709055 Presence of UL SDAP header on default DRB ASUSTeK discussion Rel-15 NR_newRAT-Core

R2-1709060 QoS flow to DRB remapping LG Electronics France discussion NR_newRAT-Core

R2-1709068 Configurability for the presence of SDAP header LG Electronics discussion NR_newRAT-Core

R2-1709071 Configuration scenarios on whether or not a SDAP header is present LG Electronics discussion NR_newRAT-Core

R2-1709075 Further discussion on Reflective QoS LG Electronics discussion NR_newRAT-Core

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R2-1709086 QoS handling in Handover LG Electronics discussion NR_newRAT-Core
R2-1709089 SDAP configuration LG Electronics discussion NR_newRAT-Core
R2-1709162 Reflective QoS consideration when QFI size less than 1 byte Beijing Xiaomi Mobile Software discussion Rel-15
R2-1709174 Consideration on the introduction of SDAP discard function Beijing Xiaomi Mobile Software discussion Rel-15
R2-1709179 QoS Flow Remapping Beijing Xiaomi Mobile Software discussion Rel-15

10.4 Stage 3 control plane

10.4.1 RRC

10.4.1.1 TS

Latest TS 38.331, other rapporteur inputs, etc. Please submit any new text proposals to the appropriate agenda item. Note specification methodology has been given a separate AI for RRC.

R2-1708468 TS 38.331 Ericsson draft TR Rel-15 38.331 0.0.5 NR_newRAT-Core
=> Endorsed as v0.1.0

R2-1709488 Introducing support for NR (draft running CR to 36.331) Samsung Telecommunications draftCR Rel-15 36.331 14.3.0 NR_newRAT-Core D
=> Think more for the next meeting whether we will extract the SA parts before submission for approval in December.
=> Endorsed as running CR.

10.4.1.2 Specification methodology

R2-1708213 Need codes and conditional codes in NR ASN.1 Huawei, HiSilicon discussion Rel-15
R2-1707828 Critical extensions in NR RRC Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708469 RRC methodology Ericsson discussion Rel-15 NR_newRAT-Core
R2-1709485 Specification improvements for NR RRC Samsung Telecommunications discussion Rel-15
R2-1707826 Capturing Need Code guidelines and RRC procedures Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1707827 Capturing basic NR PDUs Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708835 Default Need code Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1709886 RRC Specification methodology TP Ericsson, Nokia, Nokia Shanghai Bell, NTT DOCOMO discussion Rel-15 NR_newRAT-Core
=> Agreed

Withdrawn

R2-1707825 Automatic syntax checking for RRC CRs Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
=> Withdrawn

10.4.1.3 Connection control procedures

No documents should be submitted to 10.4.1.3. Please submit to 10.4.1.3.x.

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10.4.1.3.1 Connection control procedures email

Output from and contributions related to email discussion [98#30][NR] RRC Connection Control (Intel)

R2-1708799 Email discussion report on [98#30][NR] RRC Connection Control discussion Intel Corporation Rel-15 NR_newRAT-Core

Agreements
1. For IDLE to CONNECTED RRC transition, a 3-step RRC procedure is used.
2. For IDLE to CONNECTED RRC transition, RRC Connection Request kind of message is sent over SRB0 carried by RACH MSG3.
3. For a failure to establish an RRC connection (e.g. due to congestion conditions) RRC Connection Reject kind of message is sent over SRB0 carried by RACH MSG4.
4 For a successful establishment of an RRC connection during the IDLE to CONNECTED RRC transition, RRC Connection Setup kind of message is sent over SRB0 carried by RACH MSG4.
5 For a successful establishment of an RRC connection during the IDLE to CONNECTED RRC transition, RRC Connection Setup Complete kind of message is sent over SRB1 carried by MSG5.
6 RRC Connection Request kind of message includes UE identity and establishment cause.
6.1 Some form of relation is foreseen between the access categories and establishment causes; details are FFS.
FFS if MSG3 also could also include other information e.g. NAS message, 5G CN node selection, UE capability of supporting high frequency, the access category indicating a type of services or other information sent over MSG5.
7. RRC Connection Reject kind of message includes the wait time.
FFS redirect information
FFS Value range of wait time.
FFS Whether to include frequency/RAT deprioritisation information.
8 RRC Connection Setup kind of message includes dedicated radio resource configuration for SRB1.
9. RRC Connection Setup Complete kind of message includes 5CN node selection information and dedicated NAS PDU (except if they were sent in MSG3 in the case that the FFS from Proposal 6.2.1 were to be agreed).
10.For CONNECTED to IDLE RRC transition, the RRC Connection Release kind of message is used and is sent over SRB1
FFS whether the same RRC message is used for the RRC transition from CONNECTED to IDLE and from CONNECTED to INACTIVE.
11. RRC Connection Release kind of message can include release cause information, redirect carrier frequency and idle mode mobility control information.
12. For INACTIVE to CONNECTED RRC transition, RRC Connection Resume Request kind of message is sent over SRB0 carried by RACH MSG3.
FFS whether to have a common message/procedure for INACTIVE to CONNECTED RRC transition, RAN location area update (RLAU), re-establishment and for IDLE to CONNECTED transition.
13. For INACTIVE to CONNECTED RRC transition, when RAN successfully retrieves and verifies the UE context, RRC Connection Resume kind of message is sent over SRB1 carried by RACH MSG4 with at least integrity protection to resume the RRC connection and, if required, dedicated radio resource configuration.
FFS NR security framework for INACTIVE UEs.
15. For INACTIVE to CONNECTED RRC transition, when RAN successfully retrieves and verifies the UE context, MSG5 is RRC Connection Resume Complete kind of message over SRB1.
FFS whether this MSG5 can be omitted in some case
16. For INACTIVE to CONNECTED RRC transition, when RAN cannot successfully retrieve and verify the UE context, RRC Connection Setup kind of message (same as used in agreement 8) is sent over SRB0 (which would enable a fallback to establish a new RRC connection similar to Rel-13 LTE).
17.1. For case described 16, the UE releases the AS security context, as well as, AS context related configurations kept while in INACTIVE.

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17.2. For case described 16, the UE AS informs the UE NAS of a fallback to establish a new RRC connection due to a failure while resuming resulting in a NAS Service Request message to establish a new connection.
21. RRC Connection Resume Request kind of message includes UE identity (or UE context identity), establishment (or resume) cause information and UE's security information (e.g. authentication token).
FFS if MSG3 also could also include other information
22. RRC Connection Resume kind of message can optionally include the dedicated radio resource configuration
FFS: Whether RRC Connection Resume Complete includes NAS PDU, 5CN node selection information (e.g. selected PLMN identity or NSSAI)
26 For CONNECTED to INACTIVE RRC transition, a RRC Connection Release kind of message is used and is sent over SRB1 (as described in proposal 10).
27 For CONNECTED to INACTIVE RRC transition, the RRC Connection Release kind of message includes (a) the same information as listed in proposal 11 (i.e. cause information, redirect carrier frequency and mobility control information), and can include (b) UE identity (or UE context identity), and optionally (c) suspension/inactivation indication (FFS if implicitly or explicitly), (d) RAN configured DRX cycle, (e) RAN periodic notification timer, and (f) RAN notification area.
29. In the following cases the UE releases the UE context, UE AS informs UE NAS
29.1. Case (b) upon failure of resume procedure (including the RAN update case);
FFS Whether this applies in all cases of failure of resume procedure
29.2. Case (d) upon reselecting to other RAT;
29.3. Case (e) upon reception of CN initiating paging;

✉ **[99#29][NR] Connection Control (Intel)**
To progress proposals 18, 19, 20 (Reject on SRB1 or SRB0 and the target state) from R2-1708799.
Intended outcome: Report to next meeting
Deadline: Thursday 2017-09-21

R2-1707848	Text Proposal to RRC Connection Control	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1707784	RRC connection control from INACTIVE	Samsung Electronics	discussion		
R2-1707850	Security issues on reject message on SRB0	Ericsson	discussion	Rel-15	NR_newRAT-Core
	Moved from 10.4.1.3.5 to 10.4.1.3.1				
R2-1707849	Addressing key FFS in email discussion [98#30][NR] RRC Connection Control	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708803	Security handling for resumption, re-establishment and handover	Intel Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1707763	Details of Network Initiated Release from INACTIVE to IDLE	OPPO	discussion		
R2-1707876	Open issues on security aspects for NR RRC connection control	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1708714	RRC state transition between CONNECTED and INACTIVE	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708716	RRC state transition from INACTIVE to IDLE	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708717	Security of INACTIVE to CONNECTED state transition	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708738	Connection Control Procedures for RRC_INACTIVE	InterDigital	discussion	Rel-15	NR_newRAT-Core
R2-1709495	Discussion on the Discussion Point 18 of [98#30][NR] Email Report	SAMSUNG Electronics Co., Ltd.	discussion		
R2-1709507	UE capability in NR RRC connection request	Sony	discussion	Rel-15	NR_newRAT-Core

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R2-1709521 Draft LS to SA3 on inactive to connected state transition Huawei Technologies France discussion Rel-15 NR_newRAT-Core

Withdrawn

R2-1708650 UE capability in NR RRC connection request Sony discussion Rel-15 NR_newRAT-Core

=> Withdrawn

10.4.1.3.2 Connection control message harmonisation

Harmonisation/merging of messages to be used for different procedures, UE identity and other message content to be used in different cases, etc.

Maximum 1 tdoc per company

R2-1709220 Harmonization of the RRC procedures Nokia discussion Rel-15 NR_newRAT-Core

R2-1707667 Further discussion on merging NR RRC messages Samsung discussion Rel-15 NR_newRAT-Core

R2-1707842 Harmonizing of the RRCConnection, Reestablishment and Resume procedures Ericsson discussion Rel-15 NR_newRAT-Core

R2-1707896 RRC connection re-establishment and resume procedures in NR CATT discussion Rel-15 NR_newRAT-Core

R2-1708700 Consideration on the procedure design for transition from INACTIVE to CONNECTED state and for RRC connection re-establishment Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708739 Harmonization of Connection Control Procedures and Messages InterDigital discussion Rel-15 NR_newRAT-Core

R2-1708800 Common resumption and reestablishment procedure Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708989 Harmonised Connection Control Messages CMCC discussion Rel-15 NR_newRAT-Core

R2-1709113 Simplification of RRC messages for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709401 Harmonization of the RRC connection management procedures NTT DOCOMO INC. discussion Rel-15 NR_newRAT-Core

R2-1709541 RRC service request MediaTek Beijing Inc. discussion

R2-1709636 Open issues for connection control Qualcomm Incorporated discussion

10.4.1.3.3 Connection reconfiguration

Structure and content of RRCConnectionReconfiguration message.

Including output from email discussion [NR-AH2#12][NR] RRCConnectionReconfiguration structure (Ericsson)

R2-1708036 [NR-AH2#12][NR] RRCConnectionReconfiguration structure - Email discussion summary Ericsson discussion Rel-15 NR_newRAT-Core

Agreements:
1 NR RRC signalling should clearly distinguish UE-, cell-group- and serving-cell- specific parameters: Parameters for each serving-cell cell are collected in an IE and one or more such IEs are present in the IE containing the Cell-Group specific configuration (as depicted in Figure 5 of R2-1708036).
2 Use SRB-ToAddModList, DRB-ToAddModList and DRB-ToReleaseList to maintain the PDCP-configuration and SDAP-configuration per radio bearer and include the radio bearer related configuration into a RadioBearerConfig (see Figure 6 of R2-1708036).
3 Use LCH-ToAddModList and LCH-ToReleaseList inside the NR cell-group configuration IE to associate logical channels and their RLC entities with radio bearers (PDCP entities) (see Figure 6 of R2-1708036).

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FFS1 to a) re-use the current LTE structure where the LCH- and RLC- configurations for the LTE MCG are inside the DRB-ToAddModList; associate the NR-SCG cell-group configuration with that list (Figure 7); or b) adopt the newly agreed NR structure where the LCH- and RLC configuration is part of the cell group configuration (Figure 6) also for the LTE ASN.1. (Intention is to consider the examples of ASN.1 structure provided by Ericsson to help make a decision)

FFS2 whether … a) the PDCP-Config and SDAP-Config for each DRB are in a separate container; or b) the PDCP-Config and SDAP-Config of all MCG DRBs are in one container and the PDCP-Config and SDAP-Config of all SCG DRBs are in another container; or c) the PDCP-Config and SDAP-Config of all DRBs are in a common container

4 For EN-DC, the "NR RRC PDU" containing the NR "SCG RLC/MAC/Phy config" should be the NR RRCConnectionReconfiguration message.

5 For EN-DC, the SgNB may include the PDCP-config in the "NR RRC PDU from the SN" only when it changes the PDCP configuration of one of its SCG(-Split) DRBs using the direct SCG-SRB.

FFS3: For NR-NR DC, whether the SCG configuration should … a) be conveyed as full RRC message (see Figure 8)? If so, do you think that it should be the NR RRCConnectionReconfiguration (i.e., embedding an NR RRCConnectionReconfiguration message into another NR RRCConnectionReconfiguration message); or b) be embedded directly, i.e., a container and/or a message is not necessary for this case (like Figure 9)

6 For NE-DC, the NR pdcp-Config DC should follow the principle agreed for EN-DC, i.e., pdcp-Config is separated from the lower layer configuration. The pdcp-Config field in the LTE SCG-Configuration is omitted.

FFS4 For NE-DC whether … a) The LTE SCG configuration should be conveyed as LTE RRCConnectionReconfiguration message inside a container in the NR RRCConnectionReconfiguration, or b) The LTE SCG configuration should be conveyed as an IE inside the NR RRCConnectionReconfiguration

=> Offline discussion to progress FFS1 and FFS2 points. Can also consider the LTE and NR procedures that would correspond to this structure (Ericsson, Offline discussion #45)

R2-1709934 Offline 45: Summary of reconfiguration structure Ericsson

Agreements
- For LTE lower layers (RLC, LCH), reuse LTE DRB-AddModd structure
- For bearers using NR PDCP, aim to capture UE behaviour in NR specification
- Bearer structure is following for bearers using NR PDCP:
- We will introduce a new RadioBearerConfig IE in NR spec which is covering all bearers using NR PDCP
- MeNB is still deciding DRB ID but this is signalled to the SeNB and used as "anchor point" to link lower layers and higher layers

FFS details of security parameters
- Bearer handling is captured in NR specification.

Working assumption: there are 2 transparent containers including radio bearer configuration lists (including PDCP-ConfigNR, DRB ID, EPS ID per bearer).

=> We will attempt to create a stage 3 CR based on above to be able to assess the agreements.

✉ **[99#30][NR] RRC Connection Reconfiguration (Ericsson)**
- To discuss the following open issues and also draft stage 3 ASN.1 and procedures, including the LTE part:

Security configuration and parameters
If all bullets apply to SRBs
Bearer change between LTE and NR PDCP
Next steps
Update text proposal and share with others
Check L2 actions

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Focus should be on the high level structure and only if time allows the discussion could discuss other unrelated parts of the configuration.
Intended outcome: Report and TP to next meeting
Deadline: Thursday 2017-09-21

R2-1708037 Text Proposal for NR RRCConnectionReconfiguration Ericsson discussion Rel-15 NR_newRAT-Core
=> Revised in R2-1709871 (Ericsson, Offline discussion #45)
R2-1709871 Text Proposal for NR RRCConnectionReconfiguration Ericsson discussion Rel-15 NR_newRAT-Core
=> To be used as starting point in the email discussion from R2-179934

R2-1707873 Enhance RRC configuration procedure in NR Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1707897 RRC connection reconfiguration procedure in NSA CATT discussion Rel-15 NR_newRAT-Core
R2-1708792 UE handling of combined configuration messages Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708795 L2 handling using explicit RRC signalling Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708797 RRC signalling for SDAP configuration Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708831 RRC Connection Reconfiguration for MR-DC and NR-NR DC Intel Corporation discussion NR_newRAT-Core
R2-1708836 Security algorithm configuration for Radio Bearers Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1709550 Open issues of NR RRCConnectionReconfiguration Ericsson discussion Rel-15 NR_newRAT-Core
R2-1709615 NR RRC Reconfiguration message for SA and NSA Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1709616 LTE RRC design for EN-DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Withdrawn

R2-1707882 Handling of overhead messages in NR Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
=> Withdrawn

10.4.1.3.4 Connection control procedures - NSA aspects

Start to progress stage 3 details related to SCG SRB, split SRB, SCG failure handling, etc.

R2-1709618 Default configuration of SRB1S and SRB2S in NR side for EN-DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1707898 The split SRB impact on LTE ASN.1 CATT discussion Rel-15 NR_newRAT-Core
R2-1708460 Handling of SRBs in connection re-establishment LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709105 Handling of SCG configuration in RRC_INACTIVE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709570 Information to include within RRC Activation and Inactivation Samsung Electronics discussion
R2-1709617 NR failure handling for both SA and NSA Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1709619 Transmission of NR RRC message over MCG SRB Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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Late

R2-1707829 Capturing NR PDUs in EN-DC Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

10.4.1.3.5 Connection control procedures - other

Other aspects of connection control procedures, state transitions, etc

R2-1708081 RAN2 impact of non-contiguous CA Samsung discussion Rel-15

R2-1708082 Draft reply LS to RAN1 on non-contiguous CA Samsung discussion Rel-15

R2-1707668 Inactivity-based transition to a power efficient state Samsung discussion Rel-15 NR_newRAT-Core

R2-1707851 Security issues on Msg3 (RRCConnectionResumeRequest) Ericsson discussion Rel-15 NR_newRAT-Core

R2-1707899 Open issues on state transition from INACTIVE to CONNECTED CATT discussion Rel-15 NR_newRAT-Core

R2-1708027 Multiplexing NAS messages with MSG3 Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708089 Numerology configuration in NR Samsung discussion Rel-15

R2-1708368 Discussion on additional enhancement for INACTIVE to IDLE state transition procedure OPPO discussion

R2-1708404 Consideration on RRC connection establishment procedure Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708405 [DRAFT] LS to RAN1 on MSG3 size Huawei LS out Rel-15 NR_newRAT-Core RAN1

R2-1708406 RRC Establishment Cause Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708407 RRC support of multiple numerologies Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708419 UE AS context retrieve failure vivo discussion Rel-15 NR_newRAT-Core

R2-1708701 UE behaviour upon leaving RRC_CONNECTED state Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708715 Timer based state transition from CONNECTED to INACTIVE Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708740 Timer-Based Inactivation for NR InterDigital discussion Rel-15 NR_newRAT-Core

R2-1708801 MSG4 handling during congestion when trying to transition from INACTIVE to CONNECTED Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708802 [DRAFT] LS on security handling of MSG4 during INACTIVE to CONNECTED transition Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708804 [DRAFT] LS on security handling for resumption, re-establishment and handover Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1709111 Remaining FFS about RAN area update procedure LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709169 Consideration on the triggers of transiting UE from INACTIVE to IDLE Beijing Xiaomi Mobile Software discussion Rel-15

R2-1709221 RRC Connection establishment procedures Nokia discussion Rel-15 NR_newRAT-Core

R2-1709222 RRC connection release and inactivation procedures Nokia discussion Rel-15 NR_newRAT-Core

R2-1709580 UE Assistance Information for energy efficiency enhancement Samsung Electronics discussion

10.4.1.4 RRM measurements

No documents should be submitted to 10.4.1.4. Please submit to 10.4.1.4.x.

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10.4.1.4.1 Cell quality derivation

If any remaining aspects to discuss

Maximum 1 tdoc per company

R2-1708113 Remaining issues on cell quality derivation ZTE Corporation discussion Rel-15 NR_newRAT-Core

P1
- Intel support the proposal. MediaTek also support. Qualcomm
- Huawei asks about whether cell specific values for CSI-RS. ZTE think this could be discussed mode.
- CATT think there is enough flexibility without a per cell value of N. Huawei wonder if this assumes that there is are the same number of CSI-IS per cell. Ericsson think the N can be a single value but the number of CSI-RS resources provided per cell could be different.
-

P4
- Samsung wonder if RSRQ and SINR. Intel think that this is still discussed in RAN1.1

Agreements
1: Independent N and independent threshold should be configured per carrier frequency in the MeasObject for NR-SS based and CSI-RS based L3 mobility. (This agreement does not have any implication on the number of CSI-RS resources that can be configured per cell)

=> We will discuss in RAN2 how to do averaging of RSRQ and SINR when the measurement definitions are clear in RAN1/4.
=> Send LS to RAN1/4 to explain that we have agreed and captured the measurement model and that the cell quality derivation will be captured in RRC. Draft LS in R2-1709874, ZTE, Offline discussion #47

R2-1709874 [Draft] LS on Measurement model ZTE LSout

=> Approved in R2-1709971

R2-1709508 Deriving Cell Qualty Using Linear Average or Sum of Beam Measurements Sony discussion Rel-15 NR_newRAT-Core

R2-1709290 On including or excluding beams from cell quality derivation Ericsson discussion Rel-15 NR_newRAT-Core

- MediaTek wonder what is the real use case that a beam should be blacklisted. Ericsson explain that this is for the case that there are some beams that the UE might detect that the network knows will not be useful to the UE.
- Intel think if the UE moves then the beam that the UE has been told not to consider might actually be the best beam for the UE.
- ZTE also don't think the black list should not be per beam. Qualcomm have the same view. Samsung also have the same view. Vivo also. Nokia have a similar.

=> Noted

R2-1707768 Remaining Issues about Cell Quality Derivation OPPO discussion

R2-1708583 Remaining issues on cell quality derivation Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708702 Remaining issues on cell quality derivation Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708781 Discussion on RRM filtering Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708782 draft LS on filters for RRM measurements in NR Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708997 Configuration of N for Cell Quality Derivation CMCC discussion Rel-15 NR_newRAT-Core

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Withdawn

R2-1708651 Deriving Cell Qualty Using Linear Average or Sum of Beam Measurements Sony discussion Rel-15 NR_newRAT-Core

=> Withdrawn

10.4.1.4.2 Measurement report content

Continue to progress the details of the measurement report content.

Maximum 1 tdoc per company

R2-1708250 Measurement Report Content in NR MediaTek Inc. discussion

P1
- LG understand that only cell with expired timer would be in the list.
- Huawei would like to report cells for which the TTT has expired and the cells for which the leaving condition has not been met

P2
- Nokia agree that the report should include at least the measurements with the same quantity as used for triggering but would not like to prevent others from being reported.

P3
- Ericsson suggest there should be a bound for total number of beams across all cells.
- Samsung think if only beam ID is reported the threshold is needed to give some quality information to the network and think the same threshold can be used as for cell quality derivation. Intel support the Samsung view. Qualcomm also agree. Ericsson wonder if N is 1 but X is 5 then would you still use the same threshold.

P6
- Ericsson think this assumes that there is no trigger event that is based on both NR-SS and CSI-RS. Panasonic think we already agreed not to mix NR-SS and CSI-RS in triggering.
- ZTE would like to include both in case it is triggered based on CSI-RS. Would also prefer both in the other direction.
- OPPO agree with the proposal. Intel think it is simply to only report based on the NR-SS or CSI-RS that was triggered. Ericsson explain that the network can already configured triggered of different events based on NR-SS and CSI-RS.
- Samsung support the proposal. Think it will eventually add complexity to UE behaviour.
- MediaTek think that the CSI-RS report is more accurate and hence there is not much value t also provide the SS Block measurements.
- Huawei think it would be useful to provide available SS Block measurements as well for a CSI-RS triggered event and don't see much complexity. Nokia clarify the intent to report what is available in the UE, not make the UE do more measurements.

Agreements
1: Cells in the cellsTriggeredList are reported (i.e. TTT has expired and leaving condition has not been met, same as LTE)
2: Measurement quantity to be reported for cell quality can be same as trigger quantity or both RSRP/RSRQ. Measurement quantity to be reported for beam measurements can be same as (cell) trigger quantity or both RSRP/RSRQ.
3: For measurement events based on NR-SS, in each cell the best SS block is reported and up to x-1 next highest measured SS blocks above the absolute threshold. Threshold is the same as that used for cell quality derivation.
4 For measurement events based on CSI-RS, in each cell the best CSI-RS is reported and up to y-1 next highest measured CSI-RS above the absolute threshold. Threshold is the same as that used for cell quality derivation.
5: Cell quality derived from NR-SS for the same cell is not included in a measurement report triggered based on CSI-RS.
6: Cell quality derived from CSI-RS for the same cell is not included in a measurement report triggered based on NR-SS.

R2-1708703 Measurement reporting for NR SS and CSI-RS Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

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Agreement
1 The current beam report agreements (network configures the UE to report beam identifier only, beam measurement result and identifier, or no beam reporting) applies to both event-triggered reports and periodical reports.

R2-1708584 Selection of cells and beams to be included in the measurement report Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707694 Cell quality in the measurement report PANASONIC R&D Center Germany discussion
R2-1707901 Considerations on measurement reporting related to serving cells CATT discussion Rel-15 NR_newRAT-Core
R2-1707973 Measurement report trigger condition Spreadtrum Communications discussion Rel-15
R2-1708590 On NR Measurement reporting Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1708779 Remaining issues on measurement report content Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708902 Remaining open issues on measurement report content LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709076 Remaining Issues of Measurement Report Content ITRI discussion NR_newRAT-Core
R2-1709092 Open issues of measurement report contents Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1709103 On some remaining issues aboutNR measurement reporting CATT other
R2-1709592 NR Measurement Report Contents Samsung Electronics discussion

Agreements
1: For cells to be included for event triggered MR, number of cells reported is up to, maxCellMeas (as in LTE)

10.4.1.4.3 Measurement configuration

Continue to progress the details of the measurement report configuration.

Maximum 1 tdoc per company

R2-1709292 Measurement configuration Ericsson discussion Rel-15 NR_newRAT-Core
P1
- AT+T thinks it needs to be clarified that there are carriers without SSB and in this case the offset could be to a different carrier. Ericsson think there could be a pointer to another measurement object for this case.
- MediaTek think there could be more than one SSB offset per measurement object.
- Ericsson assume that if there is more than one SSB per MO then the UE would have to measure on them both.
- Intel thinks it would be easier to configure the measurement object to be the centre frequency to be measured on. AT+T think this would be good to decide on and think the MO would be one carrier and there could be one or more BWPs and SSBs
- AT+T agrees that for SSB measurement then the UE would only need to know the centre of the SSB.
- Nokia wonder what would be the added value of knowing the centre freq of the carrier instead of just the centre of the SSB. Ericsson see the option to configure fewer MOs.
- Qualcomm wonder if the SSB is always aligned with the channel raster. ATT think that RAN4 is discussing but it is likely not to be aligned with the channel raster.

Agreements
1 There is one NR-ARFCN per MO

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2 For measurements of carriers where SSB is not present (measurements performed on CSI-RS):
i MO includes CSI-RS resources for L3 mobility measurements; and
ii MO includes some indication that no SSB is provided on this carrier.
FFS Where the UE acquires timing reference for making measurements in this carrier. E.g. can UE assume timing reference from one of its serving carriers (for CA case), or does the MO include a pointer to another carrier with SSB for obtaining timing reference.

3 For measurements of carriers where SSB is present:
If SSB is not located in the centre of the carrier, then offset to the ARFCN provides the location in frequency of the SSB within that carrier.
FFS Whether the MO has only one SSB or whether the MO can include the location of more than one SSB.

Agreements above relate to a single BWP in which case the NR ARFCN would be the centre of the BWP. Case of multiple BWPs is FFS

Agreements:
1 Keep current principles where measurement results are collected per measurement ID and the VarMeasReportList lists information per measurement ID about measurements for which triggering conditions have been met.
2 Include whitecell list in NR measurement object and parameter usewhitecell list in reporting configuration (or at measurement ID level) as in LTE.
3 Include both frequency specific offset as well as cell specific offsets in MO. Offsets are for use in the event evaluation.
FFS Whether it is possible to also include cell specific offsets within the reporting configuration.
4 Autonomous changes to the measurement configuration are included in the spec only if necessary to avoid situations where the measurement configuration would be invalid following handover or re-establishment.

=> Offline activity to try to conclude on the additional information (periodicity, time offset, window) for both SSB and CSI-RS based on received parameters from RAN1. (Ericsson, Offline discussion #48)
- Update from offline discussion: No progress but email discussion is proposed.

✉ **[99#31][NR] Additional information for SSB and CSI-RS config (Ericsson)**
to conclude on the additional information (periodicity, time offset, window) for both SSB and CSI-RS based on received parameters from RAN1
Intended outcome: Report to next meeting
Deadline: Thursday 2017-09-21

R2-1709510 S-measure for Connected Mode Measurements Sony discussion Rel-15 NR_newRAT-Core
R2-1707902 Configurations for cell quality derivation and beam reporting CATT discussion Rel-15 NR_newRAT-Core
R2-1708005 Measurement Configuration with NR-SS and CSI-RS MediaTek Inc. discussion NR_newRAT-Core
R2-1708114 Discussion on the configuration of the measuremnet object ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708420 SS block and CSI-RS based measurement configuration in RRC_CONNECTED state vivo discussion Rel-15 NR_newRAT-Core
R2-1709317 Further discussion on whitelist and blacklist measurement configuration HTC Corporation discussion NR_newRAT-Core

Late

R2-1709685 Remaining issues of NR RRM measurement configuration Samsung discussion

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Withdrawn

R2-1708653 S-measure for Connected Mode Measurements Sony discussion Rel-15 NR_newRAT-Core

=> Withdrawn

10.4.1.4.4 Measurement events

Any additional aspects of measurement events, including Cx events, etc

Cx-like events

R2-1707900 Further considerations on events C1 and C2 CATT,OPPO, vivo, MediaTek discussion Rel-15 NR_newRAT-Core

R2-1709487 Reconfiguration beam management CSI RS config upon intra-cell mobility Samsung Telecommunications discussion Rel-15

R2-1709293 Measurement events Cx in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708115 Discussion on the introduction of SS-block specific events ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708252 Introducing Events C1 and C2 in NR MediaTek Inc. discussion

R2-1708679 C1/C2 events support in NR Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1708704 On the need for Cx events Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708748 Measurement configuration with Ax and Cx events InterDigital discussion Rel-15 NR_newRAT-Core

Other

R2-1708707 Measurement report triggering mechanism in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

- MediaTek ask if this is just for A3, A6 C1, C2 today and asks if it is intended to be applicable for other events.
- Samsung think it is not an event specific mechanism and propose it should not be linked to specific events, even if there are restrictions.
- Nokia support the proposals. Qualcomm also support the proposals.

Agreements:
1: Support the ‘reportOnLeave’ measurement report triggering mechanism in NR.
2: When the measurement report is triggered due to reportOnLeave, the UE just reports the current remaining triggered cells, not the ‘leave’ cell(s), as in LTE.
3: The ‘reportOnLeave’ is applicable for all the measurement events and is configurable per reporting configuration.
4: Support the event-triggered periodic-report mechanism (with reportAmount and reportInterval) in NR.
5: When new cell fulfils the event entry condition during timeToTrigger, restart the periodic reporting timer and reset the numberOfReportsSent.

R2-1708251 N-mismatch Problem in NR Measurement Events MediaTek Inc. discussion

- Ericsson think it introduces unnecessary complication. We have agreed that beams are reported so the network has the information to make the handover decision. Think for cell reselection case where UE decides there may be an issue to address.
- Samsung think the cell quality derivation can achieve the results. MediaTek think for different cells the number of good beams can be different. Agree that the beam reporting can help.
- Huawei thought that a cell offset could address this case.
- Qualcomm think the proposal is unnecessary as the network will know based on the beam reporting. Even for triggering, this will complicate the UE triggering.
  OPPO support the intention of the proposal but thing the details can be different.

=> Noted

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R2-1707769 Additional Measurement Triggering and Event for NR OPPO discussion

R2-1708214 Measurement configuration and procedures for SS and CSI-RS Huawei, HiSilicon discussion Rel-15

R2-1708589 On measurement events and the need of reportOnLeave Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1708708 Measurement trigger type in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709492 Triggering condition for A1-A6 events in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1709511 Comparison of Cells with Different Numbers of Good Beams Sony discussion Rel-15 NR_newRAT-Core

Withdrawn

R2-1708654 Comparison of Cells with Different Numbers of Good Beams Sony discussion Rel-15 NR_newRAT-Core

=> Withdrawn

10.4.1.4.5 Inter-RAT measurements

Inter-RAT E-UTRA measurements for the purpose of inter-RAT handover from NR to -E-UTRA

R2-1708705 Events and measurements for handover from NR to E-UTRA Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Agreements:
1: The following events for inter RAT measurements from NR to LTE are supported:
Event B1: Inter RAT neighbour becomes better than threshold
Event B2: PCell becomes worse than threshold1 and inter RAT neighbour becomes better than threshold2
2: Periodical inter-RAT measurement report configuration shall be supported in NR.
3: The measurement object for LTE in NR specification could reuse structure of measurement object for LTE frequency defined in LTE specification.
4: introduce separate MeasResults IE for NR and LTE.

R2-1707903 Inter-RAT measurement for NR CATT discussion Rel-15 NR_newRAT-Core

R2-1708122 Inter-RAT measurements for NR handover to EUTRAN ZTE Corporation discussion Rel-15 NR_newRAT-Core

Late

R2-1709682 Inter-RAT Measurement Events for NR Samsung discussion

10.4.1.4.6 Measurement gaps

For initial discussion in RAN2 but may be difficult to progress without input from RAN4.

R2-1708471 Intra and Inter-frequency definitions and Measurement gaps in NR Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

- Qualcomm think that RAN4 is discussing these aspects.
- Nokia think that RAN is discussing the need for any new terminology. Then we will need to decide if we need to use their terminology to try to map to it.
- Qualcomm think in LTE we have some definitions for intra and inter and this is useful at stage 2 level but not at stage 3 in RAN2. Huawei think its main use functional use is for idle behaviour..
- Intel wonder if we could agree or ask RAN4 about gas for intra-freq.

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=> We will wait for RAN4 to provide us with information before we progress with measurement gaps.
=> Noted

R2-1707770	Measurement Gap Configuration Considering the Beam Sweeping	OPPO	discussion		
R2-1707974	Sliding measurement GAP	Spreadtrum Communications	discussion	Rel-15	
R2-1708116	Consideration on measurement gap	ZTE Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708253	Measurement Gaps in NR	MediaTek Inc.	discussion		
R2-1708421	Discussion on measurement gap	vivo	discussion	Rel-15	NR_newRAT-Core
R2-1708706	Measurement gap configuration in NR	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708709	Definition of GAP assisted measurement in NR	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708780	Measurement gap in NR	Intel Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1709019	Measurement gap for NR	Samsung	discussion	Rel-15	NR_newRAT-Core
R2-1709131	Measurement gap considering beam	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core
R2-1709294	Configuration of measurement gap in NR	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1709295	Draft LS to RAN4 on need of measurement gaps	Ericsson	discussion	Rel-15	NR_newRAT-Core

10.4.1.4.7 Other

Other RRM related aspects

Including output from email discussion [NR-AH2#13][NR/RRM] TP on RRM (Ericsson)

R2-1707855	Summary of [NR-AH2#13][NR/RRM] TP on RRM	Ericsson	discussion	Rel-15	NR_newRAT-Core

=> Endorsed

✉ **[99#32][NR] TP on RRM (Ericsson)**
To capture progress from this meeting.
The discussion can also resolve small FFS points (e.g. items taken from the LTE baseline that do not directly translate into NR without some discussion, and items (e.g. features added in later releases of LTE) from the LTE baseline for which there has not yet been an explicit decision whether to include them in NR).
Email discussion summary should provide a summary of any small decisions that were taken as well as provide a list of the remaining FFS points.
Intended outcome:
Deadline: Thursday 21/09/2017

Measurement BW, impact of BWP

R2-1708090	Issues on RRM measurement bandwidth in NR	Samsung	discussion	Rel-15

Moved from 10.4.1.4.4 to 10.4.1.4.7
P1
- Samsung understand BWP is just for connected mode UE but we still need to configure the BW for the idle mode UE.

P3
- AT+T wonders if the BW configuration is tied to the BWP or the MO.
- MediaTek think it depends what functionality we need to support, e.g. for mobility for BWP management. Hence this would be in the measurement object.

=> Noted

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R2-1708207 Measurement configuration for carriers and bandwidth parts without SS blocks AT&T discussion

Moved from 10.4.1.4.3 to 10.4.1.4.7

R2-1708001 RRM Measurement for Bandwidth Part Operation MediaTek Inc. discussion NR_newRAT-Core

Other

R2-1709486 Measurement configuration and reporting, signalling baseline Samsung Telecommunications discussion Rel-15

=> Offline discussion to progress on proposal 1 (Samsung, Offline discussion #49)
=> Proposal 1 to be discussion on the email progress the measurements TP

R2-1707830 Definition of measurement object for NR Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1707831 Considerations on fast access inter-site small cells in NR Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1708026 Measurement configurations and signaling for fast setup Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708091 RRM considerations for adaptive bandwidth in NR Samsung discussion Rel-15

R2-1708092 RRM measurement for multiple numerologies in NR Samsung discussion Rel-15

R2-1708117 Discussion on the triggering of performing measurement ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708578 s-Measure and its impact on cell level and beam level measurements in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708580 Mobility states and speed based parameter scaling in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708581 ANR framework in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708582 TP on ANR to 36.300 Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708710 Speed dependent mobility in connected state Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1709296 On cell and beam level report quantities Ericsson discussion Rel-15 NR_newRAT-Core

R2-1709297 Draft LS on On the need to support quality measurements in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1709527 Definition of s-Measure for NR Convida Wireless LLC discussion Rel-15 NR_newRAT

R2-1709593 NR CSI-RS configuration for RRM measurement Samsung Electronics discussion

R2-1709601 Discussion on Adaptation of Measurement Related Parameters for Different Mobility Scenarios Samsung Electronics discussion

R2-1709605 Discussion on s-Measure Considering NR-SS and CSI-RS Samsung Electronics discussion

R2-1709606 The Impact of Beam Sweeping on RRM Measurement Samsung Electronics discussion

10.4.1.5 System information

No documents should be submitted to 10.4.1.5. Please submit to 10.4.1.5.x.

10.4.1.5.1 System information content/structure

Progress details of the content and structure of system information with priority on MIB content required for EN-DC operation, including addressing the identified FFS points from last meeting.

PBCH content

R2-1708570 Finalising NR P-BCH contents from RAN2 viewpoints NTT DOCOMO, INC., Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

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P1
- Ericsson wonder what is the benefit. If SIB 1 is not provided the UE will detect this.
- Samsung ask if the same bit is achieves the existing cell barring behaviour as well as the avoidance of camping on EN-DC cells. DOCOMO explain the bit is meant to achieve the same purpose as today as well as for the EN-DC case.
- AT+T think there is benefit for the UE to have this as early as possible.
- Vivo also support the proposal. CATT also support.
- Huawei support the proposal to both in the MIB but think the existing behaviour might not be applicable for the EN-DC case, could be a longer time before the UE has to cell. Qualcomm think the scenario doesn't matter as the PCI could be reused in another place by a cell that is not an NSA only cell.
- Vodafone think the cell could be barred for longer than 300s. There could be longer barring timer due to different PCI reuse. Chair thinks the larger PCI reuse that could mean a longer timer for both EN-DC and normal barring case.
- ZTE wonder if there is a case where a cell is shared by 2 PLMNs one which uses it as NSA and one which uses it as SA.

a/ 2 bits in MIB (cellbarred and IFRI), 0 bits in SIB1
10

b/ 1 bit in MIB, cellbarred and IFRI in SIB1
11

c/ 0 bits in MIB, cellbarred and IFRI in SIB1
3

P3
- Vivo ask if the bit means that all the cells are synchronised. DOCOMO explains that it implies that all the neighbours identified from the serving cell are synchronised to it.
- ATT think the bit has been decided in RAN1 but RAN 2 to decide the location.
- DOCOMO explain the benefit is that the UE can skip to read the PBCH when it is performing measurements. AT+T share the view of DOCOMO.

Working assumption
1: 1 bit (final name FFS, but same UE behaviour as cellbarred in LTE) is included in NR MIB to indicate that a cell cannot be camped on. intraFreqReselection is 'not allowed' (not signalled). BarredTimer is specified, value FFS.
cellBarred and intraFreqReselection signalling in SIB1 (as in LTE)

Agreements
2: Synchronisation information (1 bit) is provided to inform that the UE can utilise serving cell timing to derive the index of SS-block transmitted by neighbour cell (e.g. radio frame or SFN or symbol level synchronisation).
3: The synchronisation information can be provided via both dedicated RRC signalling and broadcast, but not via NR MIB.
FFS on the location of the bit in the SIBs

R2-1707764	Further Discussion on PBCH Left Issues	OPPO	discussion		
R2-1707877	Open issues on NR PBCH contents	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1707904	Camping indication in NR-PBCH	CATT	discussion	Rel-15	NR_newRAT-Core
R2-1708064	Discussion on detailed indications in MIB	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708065	Draft LS on NR-PBCH content	Huawei, HiSilicon	LS out	Rel-15	NR_newRAT-Core RAN1
R2-1708160	Indication in NR system information that cell is not campable	Ericsson	discussion	Rel-15	NR_newRAT-Core

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R2-1708422 Remaining issues on minimum system information content vivo discussion Rel-15 NR_newRAT-Core

R2-1709512 Barring Indication in MIB Sony discussion Rel-15 NR_newRAT-Core

Other

R2-1709496 Remaining aspects of PBCH and SIB1 contents SAMSUNG Electronics Co., Ltd. discussion

R2-1707874 Organization of NR System Information Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

R2-1707879 Considerations on NR indication Qualcomm Incorporated, KDDI discussion Rel-15 NR_newRAT-Core

R2-1707880 Draft reply LS on NR indication Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

R2-1708066 Discussion on maximum idle mode DRX value in NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708067 draft Reply LS on maximum idle mode DRX value Huawei, HiSilicon LS out Rel-15 NR_newRAT-Core SA2

R2-1708068 Detailed design on the contents of System Information Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

R2-1708104 Content of the NR-RMSI ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708161 SS Block Index dependent system information Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708162 System information structure and contents Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708163 SIBs needed for initial NR deployments Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708164 System information handling in EN-DC Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708828 System information to be provided in NR Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1709093 Considerations on support of supplementary uplink frequency CMCC discussion Rel-15 NR_newRAT-Core

R2-1709561 Structure and Content of Remaining Minimum SI Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1709620 SIBs needed for NSA Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

Withdrawn

R2-1708103 Consideration on the fast camp indication ZTE Corporation discussion Rel-15 NR_newRAT-Core
=> Withdrawn

R2-1708655 Barring Indication in MIB Sony discussion Rel-15 NR_newRAT-Core
=> Withdrawn

10.4.1.5.2 Stored system information

Further details of stored SI including index/identifier format

Maximum 1 tdoc per company

R2-1707776 Necessity of Area ID for on-demand SI NTT DOCOMO, INC., Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core

R2-1708741 Details of Stored System Information for NR InterDigital discussion Rel-15 NR_newRAT-Core

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R2-1708042	On structure of SI index	MediaTek Inc.	discussion			
R2-1708105	Consideration on the Stored other SI NR_newRAT-Core	ZTE Corporation	discussion	Rel-15		
R2-1707695	Optimized design for the SI index	PANASONIC R&D Center Germany	discussion			
R2-1707875	NR SI area ID and value tag	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core	
R2-1707906	Indexed SI in NR	CATT	discussion	Rel-15	NR_newRAT-Core	
R2-1708069	Area ID and value tag for SIBs	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core	
R2-1708165	Stored system information	Ericsson	discussion	Rel-15	NR_newRAT-Core	
R2-1708423	Stored SI for NR	vivo	discussion	Rel-15	NR_newRAT-Core	
R2-1708869	The index of stored system information	Fujitsu	discussion	Rel-15	NR_newRAT-Core	
R2-1708908	SI valid area configuration	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core	
R2-1709497	Index based approach and Stored SI	SAMSUNG Electronics Co., Ltd.	discussion			
R2-1709562	Signalling of System Information Area	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core	

10.4.1.5.3 System information modification

Maximum 1 tdoc per company

R2-1708424	SI Change Notification	vivo	discussion	Rel-15	NR_newRAT-Core	
R2-1707676	System Information Update in NR	Samsung R&D Institute India	discussion	Rel-15	NR_newRAT-Core	
R2-1707766	Discussion on NR SI Modification	OPPO	discussion			
R2-1708051	NR SI Update	MediaTek Inc.	discussion			
R2-1708070	SI Update procedure	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core	
R2-1708106	Consideration on the SI Modification	ZTE Corporation	discussion	Rel-15	NR_newRAT-Core	
R2-1708166	Change of System Information in NR	Ericsson	discussion	Rel-15	NR_newRAT-Core	
R2-1708465	System information modification	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core	
R2-1708742	SI Modification Procedure in NR	InterDigital	discussion	Rel-15	NR_newRAT-Core	
R2-1709080	Discussion on the granularity of SI change notification	ITRI	discussion	NR_newRAT-Core		
R2-1709188	SI modification for Stored SI	ITL	discussion	Rel-15		
R2-1709564	System Information Modification in NR	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core	

10.4.1.5.4 System information scheduling

Maximum 1 tdoc per company

R2-1708071	Considerations on System Information scheduling	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core	
R2-1707677	SI Message TX/RX in NR	Samsung R&D Institute India	discussion	Rel-15	NR_newRAT-Core	
R2-1707767	Consideration on NR SI Scheduling	OPPO	discussion			
R2-1707943	Remaining issues on Other SI scheduling information	ETRI	discussion	Rel-15	NR_newRAT-Core	
R2-1708167	System information scheduling	Ericsson	discussion	Rel-15	NR_newRAT-Core	
R2-1708425	Scheduling of Other SI	vivo	discussion	Rel-15	NR_newRAT-Core	

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R2-1708466	System information scheduling	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core
R2-1709566	Indication for On-Demand SI Broadcast	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core

10.4.1.5.5 On demand system information

Including need for additional bit to indicate if SI message is actually being broadcast

Maximum 1 tdoc per company

R2-1707871	Consideration on on-demand SI TX request in NR	Qualcomm Incorporated, Sony, NTT DOCOMO, INC., ZTE, Sanechips	discussion	Rel-15	NR_newRAT-Core
	moved from 10.4.1.5.1 to 10.4.1.5.6				
R2-1707678	On Demand SI: Remaining Issues	Samsung R&D Institute India	discussion	Rel-15	NR_newRAT-Core
R2-1707765	Discussion on Remaining Issues of On-Demand SI	OPPO	discussion		
R2-1707878	Open issues on NR on-demand SI	Qualcomm Incorporated	discussion	Rel-15	NR_newRAT-Core
R2-1707905	Remaining issues of on-demand SI	CATT	discussion	Rel-15	NR_newRAT-Core
R2-1707946	Other SI broadcast indication mechanism	ETRI	discussion	Rel-15	NR_newRAT-Core
R2-1707976	Additional indicator for on demand SI scheduling	Spreadtrum Communications	discussion	Rel-15	
R2-1708041	Indicator for Other SI Transmission	MediaTek Inc.	discussion		
R2-1708063	Resolving remaining FFSs	Lenovo, Motorola Mobility	discussion	Rel-15	NR_newRAT-Core
R2-1708072	On demand SI acquisition and failure handling	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1708107	Content of the Msg4 for the Msg3-based scheme	ZTE Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708168	Remaining issues for on-demand SI	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708229	On demand SI request at RLAU	NEC	discussion	Rel-15	NR_newRAT-Core
R2-1708426	On demand SI General Procedure	vivo	discussion	Rel-15	NR_newRAT-Core
R2-1708461	Remaining issues on on-demand SI request procedure	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core
R2-1708743	On Demand SI Request Procedure	InterDigital	discussion	Rel-15	NR_newRAT-Core
R2-1708870	Multiple other SI requests in MSG1	Fujitsu	discussion	Rel-15	NR_newRAT-Core
R2-1708995	Trigger of request for cell-reselection system information	CMCC	discussion	Rel-15	NR_newRAT-Core
R2-1709079	Discussion on the additional indication for on-demand SI	ITRI	discussion		NR_newRAT-Core
R2-1709164	Remain issues of on-demand SI	Beijing Xiaomi Mobile Software	discussion	Rel-15	
R2-1709567	SI Request and Delivery using Msg 3 Approach	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core

10.4.1.5.6 System information -other

Other system information related aspects

Including output from email discussion [NR-AH2#14][NR] TP on system information (Samsung)

Email discussion

R2-1709493	Email discussion report on TP to 38.331 on System Information	SAMSUNG Electronics Co., Ltd.	report		

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=> Noted

R2-1709494 TP to 38.331 on System Information SAMSUNG Electronics Co., Ltd. other
=> Revised in R2-1709891 (Offline discussion #51)

R2-1709891 TP to 38.331 on System Information SAMSUNG Electronics Co., Ltd. other
=> Structure is agreed
=> Endorsed
=> People are invited to provide comment direct to the rapporteur.

Other

R2-1707881 UE battery life impact for NR cell DTX for network energy efficiency Qualcomm Incorporated discussion Rel-15 NR_newRAT-Core
R2-1708046 MSG4 content for on-demand SI request for SI broadcast MediaTek Inc. discussion
R2-1708073 Assisted Delivery of "Minimum SI" Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708074 Public Warning system for NR Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708108 Upper layer actions for the Random Access problem ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708169 System information content at network sharing Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708170 Dedicated System Information Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708427 Considerations on RRC SI Request/Response Messages vivo discussion Rel-15 NR_newRAT-Core
R2-1708428 Discussion on other SI request vivo discussion Rel-15 NR_newRAT-Core
R2-1708467 UE dedicated on-demand SI delivery in NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1708901 Other-SI request and acquisition in CONNECTED LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1708914 On supporting multiple modification periods in NR Samsung discussion NR_newRAT-Core
R2-1709489 Dedicated signalling of SI upon UE mobility Samsung Telecommunications discussion Rel-15

10.4.1.6 Inactive state

Note that details of procedures for state transitions involving inactive (e.g. RRC Connection Resume) are covered in be discussed in 10.4.1.3.

No documents should be submitted to 10.4.1.6. Please submit to 10.4.1.6.x.

10.4.1.6.1 RAN area configuration

Maximum 1 tdoc per company

R2-1708857 Consideration on RNA configuration China Telecom Corporation Ltd. discussion
R2-1708474 RAN based notification area Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core
R2-1707669 RAN paging area for NR Samsung discussion Rel-15 NR_newRAT-Core
R2-1707845 RAN area configuration Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707863 RAN-based Notification Area Definition MTI discussion
R2-1707907 Open issues on RNA CATT discussion Rel-15 NR_newRAT-Core
R2-1708155 Consideration on RAN area configuration ZTE Corporation discussion Rel-15 NR_newRAT-Core

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R2-1708178 Discussion on RAN Notification Area Configuration SHARP Corporation discussion Rel-15
R2-1708254 RAN-based Notification Area in NR MediaTek Inc. discussion
R2-1708711 RAN notification area configuration Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708805 RAN notification area configuration Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708871 RAN based notification area configuration Fujitsu discussion Rel-15 NR_newRAT-Core
R2-1709109 RAN area configuration LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

10.4.1.6.2 RAN area update procedure

Maximum 1 tdoc per company

R2-1707670 RRC procedures for the RAN paging area Samsung discussion Rel-15 NR_newRAT-Core
R2-1707843 RAN area update in RRC_INACTIVE Ericsson discussion Rel-15 NR_newRAT-Core
R2-1707864 UE-initiated RAN-based Notification Area Update Procedure MTI discussion
R2-1707908 Periodic RNA update CATT discussion Rel-15 NR_newRAT-Core
R2-1708156 Consideration on periodic RAN area update procedure ZTE Corporation discussion Rel-15 NR_newRAT-Core
R2-1708712 Discussion on CN location Update and RNA Update for inactive state Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708744 RAN Location Area Update Procedure for NR InterDigital discussion Rel-15 NR_newRAT-Core
R2-1709479 Discussion on RAN-based location area update procedure in NR ASTRI, TCL Communication Ltd. discussion

10.4.1.6.3 Paging in inactive

RRC procedure to respond to paging, including any differences between RAN and CN paging

R2-1707909 Procedure of paging in inactive CATT discussion Rel-15 NR_newRAT-Core
R2-1707671 Further considerations on the CN and RAN paging Samsung discussion Rel-15 NR_newRAT-Core
R2-1708171 Paging in RRC_INACTIVE Ericsson discussion Rel-15 NR_newRAT-Core
R2-1708255 RAN-initiated Paging in NR MediaTek Inc. discussion
R2-1708464 RAN paging DRX in RRC_INACTIVE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1708806 RAN-initiated paging message and failure handling Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1708990 Paging failure handling in RRC_INACTIVE CMCC discussion Rel-15 NR_newRAT-Core
R2-1709107 CN-initiated paging for a UE in RRC_INACTIVE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core
R2-1709529 RAN initiated paging Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

10.4.1.6.4 Inter-RAT mobility between NR Inactive and E-UTRA/5GC Inactive

R2-1709284 Inter-RAT mobility between NR and eLTE for Inactive state LG Electronics Inc discussion Rel-15
R2-1708713 Inter-RAT mobility for inactive UE Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core
R2-1708807 Mobility of UE in INACTIVE between NR and E-UTRA connected to 5GC Intel Corporation discussion Rel-15 NR_newRAT-Core
R2-1707691 Text proposal UE re-selection in INACTIVE Samsung, Nokia, Nokia Shanghai Bell discussion

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Moved from 10.1 to 10.4.1.6.4

R2-1707672 Inter-RAT mobility in the RRC INACTIVE state Samsung discussion Rel-15 NR_newRAT-Core

R2-1707847 TP to 38.331 on RRC states Ericsson discussion Rel-15 NR_newRAT-Core

R2-1707852 Mobility between LTE and NR for inactive UE Ericsson discussion Rel-15 NR_newRAT-Core

10.4.1.6.5 Inactive - other

Other inactive state related aspects

R2-1707844 CN area updating in RRC_INACTIVE Ericsson discussion Rel-15 NR_newRAT-Core

R2-1707846 UE Context ID Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708154 CN area update in Inactive state ZTE Corporation discussion Rel-15 NR_newRAT-Core

R2-1708172 RAN sharing and identifier aspects in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708215 RLAU procedure and interaction with TAU Huawei, HiSilicon discussion Rel-15

R2-1708429 DRX configuration for Inactive UE vivo discussion Rel-15 NR_newRAT-Core

R2-1708459 Handling of radio bearers and security for data transmission in RRC_INACTIVE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1708472 Consistent support of RRC_INACTIVE Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1708473 Security in inactive state Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

R2-1708808 Inactive and dual connectivity Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708809 NAS/AS interaction when resuming Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1708815 Cell reselection for inactive UE Intel Corporation discussion Rel-15 NR_newRAT-Core

R2-1709058 State transition from RRC_CONNECTED to RRC_INACTIVE ASUSTeK discussion Rel-15 NR_newRAT-Core

R2-1709104 Consideration on MICO mode for RRC_INACTIVE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709108 Support for PLMN selection in RRC_INACTIVE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709110 Offloading UEs in RRC_INACTIVE LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1709332 UE actions upon cell reselection in RRC_INACTIVE ASUSTEK COMPUTER (SHANGHAI) discussion NR_newRAT-Core

R2-1709500 PLMN Selection in RRC INACTIVE state SAMSUNG Electronics Co., Ltd. discussion

R2-1709635 RRC_INACTIVE Principles " Qualcomm Incorporated" discussion

R2-1707665 On terminology for the NR RRC states Samsung discussion Rel-15 NR_newRAT-Core

Moved from 10.4.1.2 to 10.4.1.6.5

10.4.1.7 Access control

Continue to progress unified access control

R2-1709206 Access Barring in NG-RAN Nokia, Nokia Shanghai Bell discussion Rel-15 NR_newRAT-Core

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R2-1708916	way-forward for NR access control	Samsung	discussion	NR_newRAT-Core	
R2-1709648	Unified Access Control in different RRC Modes	Qualcomm Incorporated	discussion		
R2-1709207	Access Control applicability to different RRC states	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core
R2-1708993	Discussion on unified access control for NR	CMCC	discussion	Rel-15	NR_newRAT-Core
R2-1707703	Discussion on access control in NR	OPPO	discussion	Rel-15	NR_newRAT-Core
R2-1707883	QoS Flow based Access Control for CONNECTED Mode in NR	TCL	discussion	NR_newRAT-Core	
R2-1707910	Access control mechanism in NR	CATT	discussion	Rel-15	NR_newRAT-Core
R2-1708111	Consideration on the access control in NR	ZTE Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708455	Access category based access barring for RRC_IDLE and RRC_INACTIVE	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core
R2-1708458	Access category based access barring mechanism for RRC_CONNECTED	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core
R2-1708463	Random Access Backoff and Access Barring	LG Electronics Inc.	discussion	Rel-15	NR_newRAT-Core
R2-1708528	Access Control for NR	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708529	Access Control for RRC_CONNECTED	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708530	Access Control for RRC_INACTIVE	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708531	Unified Access Control Assessment	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708532	Signalling of Access Control Parameters	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708533	Default access control categories	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708534	Establishment causes for NR	Ericsson	discussion	Rel-15	NR_newRAT-Core
R2-1708535	DRAFT LS on Establishment Causes and Call Types in NR	Ericsson	LS out	Rel-15	NR_newRAT-Core CT1
R2-1708811	5G access control mechanism in IDLE and INACTIVE	Intel Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708812	5G access control mechanism in CONNECTED	Intel Corporation	discussion	Rel-15	NR_newRAT-Core
R2-1708917	NR access control procedure	Samsung	discussion	NR_newRAT-Core	
R2-1708918	On Establishment Cause and standardized access category	Samsung	discussion	NR_newRAT-Core	
R2-1708919	Barring configuration in NR access control	Samsung	discussion	NR_newRAT-Core	
R2-1708921	Barring skip indicator in NR	Samsung	discussion	NR_newRAT-Core	
R2-1709208	Congestion Control for RRC_CONNNECTED	Nokia, Nokia Shanghai Bell	discussion	Rel-15	NR_newRAT-Core
R2-1709242	Considerations on NR Access Control	KT Corp.	discussion		
R2-1709540	Generic Access Barring	MediaTek Beijing Inc.	discussion		
R2-1709542	Access Control in RRC_INACTIVE	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709545	Basic Access Control in NR	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core
R2-1709551	Access Control in NR for RRC_CONNECTED	Huawei Technologies France	discussion	Rel-15	NR_newRAT-Core
R2-1709552	Access Control for MT	Huawei, HiSilicon	discussion	Rel-15	NR_newRAT-Core

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10.4.1.8 Inter-Node RRC messages

Based on stage 2 progress, start to define structure and content of the Inter-Node RRC messages used for MN/SN procedures.

R2-1709022 NSA procedure: measurement result contents and its encoding for SN addition Samsung Electronics Romania discussion

R2-1709621 Inter-node message design for LTE-NR DC Huawei, HiSilicon discussion Rel-15 NR_newRAT-Core

10.4.1.9 Other

Other RRC related aspects

R2-1708173 Wait Timer in NR Ericsson discussion Rel-15 NR_newRAT-Core

R2-1708457 Configurable cause for NR LG Electronics Inc. discussion Rel-15 NR_newRAT-Core

R2-1708599 RRC processing delays in NR and EN-DC Ericsson discussion Rel-15 NR_newRAT-Core

R2-1709170 RAN2 consideration on control plane latency enhancement Samsung Electronics GmbH discussion

R2-1709324 Control of UE beamforming in RRC_CONNECTED ASUSTEK COMPUTER (SHANGHAI) discussion NR_newRAT-Core

R2-1709504 RRC signalling to support LTE+NR Co-existence SAMSUNG Electronics Co., Ltd. discussion

R2-1709655 Considerations on Establishment cause for NR KDDI discussion Rel-15

10.4.2 Idle/inactive mode procedures

10.4.2.1 TS

Latest 38.304, other rapporteur inputs, anything related to specification methodology. Please submit any new text proposals to the appropriate agenda item.

R2-1709627 New Generation Radio Access Network; User Equipment (UE) procedures in Idle mode Qualcomm Incorporated draft TS38.304 0.0.4 Rel-15 NR_newRAT-Core

10.4.2.2 Selection/reselection rules

Basic criteria and rules for cell selection and reselection

Maximum 1 tdoc per company

R2-1708816 Further considerations for cell (re)selection Intel Corporation discussion

R2-1709634 Cell selection and reselection for NR Qualcomm Incorporated discussion

R2-1708476 Cell selection and reselection for NR IDLE - cell selection/reselection criteria Nokia, Nokia Shanghai Bell discussion

R2-1707911 Service types in inactive Mode CATT discussion

R2-1708075 Cell selection and reselection rules Huawei, HiSilicon discussion

R2-1708256 Cell Selection and Reselection in NR MediaTek Inc. discussion

R2-1708315 Discussion on cell (re)selection while the beam number is less than N HTC Corporation, Mediatek discussion

R2-1708858 Service based Inter-RAT cell reselection China Telecom Corporation Ltd. discussion

R2-1708983 A cell-specific parameter for cell reselection CMCC discussion

R2-1709298 Cell selection and re-selection criteria and measurement rules Ericsson discussion

R2-1709594 NR IDLE mode Cell Selection/Reselection Samsung Electronics discussion

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10.4.2.3 Cell quality derivation

Derivation of cell quantity from beam measurements (including filtering and FFS points from previous meetings)

Maximum 1 tdoc per company

R2-1709595	NR IDLE mode Cell quality derivation	Samsung Electronics	discussion
R2-1708579	Cell quality derivation in Idle mode	Ericsson	discussion
R2-1708475	Cell selection and reselection for NR IDLE - cell quality derivation	Nokia, Nokia Shanghai Bell	discussion
R2-1707912	Considerations on idle mode measurement	CATT	discussion
R2-1708076	Derivation of cell quality in IDLE/INACTIVE	Huawei, HiSilicon	discussion
R2-1708430	Cell quality derivation in idle inactive mode	vivo	discussion
R2-1708817	Cell quality derivation for idle mobility	Intel Corporation	discussion
R2-1708898	Cell quality derivation in IDLE/INACTIVE	LG Electronics Inc.	discussion
R2-1708996	Cell quality derivation for NR idle UE	CMCC	discussion
R2-1709526	Cell Quality Derivation for Cell Reselection	Convida Wireless LLC	discussion

10.4.2.4 Service based reselection

Maximum 1 tdoc per company

R2-1708077	Service-based camping	Huawei, HiSilicon	discussion
R2-1708174	Service-based RAT/frequency selection in INACTIVE or in IDLE	Ericsson	discussion
R2-1707687	Cell Re-selection: Service Specific Frequency Prioritisation in NR	Samsung R&D Institute India	discussion
R2-1707913	Service based cell reselection	CATT	discussion
R2-1708818	Service based cell reselection	Intel Corporation	discussion
R2-1708904	Service based cell reselection	LG Electronics Inc.	discussion
R2-1709078	Discussion on service-based cell reselection	ITRI, ASUSTeK	discussion

10.4.2.5 Selection/reselection - other aspects

Including, for example mobility states, speed dependent scaling, forward compatibility for CSG, cell reservations, etc

R2-1708078	Speed dependent mobility in Idle and Inactive mode	Huawei, HiSilicon	discussion
R2-1708079	Cell reservation and forward compatibility for CSG in NR	Huawei, HiSilicon	discussion
R2-1708175	CSG-like selection and camping limitations in NR	Ericsson	discussion
R2-1708176	Camping in NR	Ericsson	discussion
R2-1708431	Cell selection reselection in NR	vivo	discussion
R2-1708432	Consideration on forward compatibilitiy	vivo	discussion
R2-1708433	Sync assistant information for RRC idle/inactive state	vivo	discussion
R2-1708718	Support of Redistribution priority in NR	Huawei, HiSilicon	discussion
R2-1708719	Cell reselection for inactive UEs	Huawei, HiSilicon	discussion
R2-1708906	Mobility state estimation in NR	LG Electronics Inc.	discussion
R2-1709279	NR forward compatibility issue for CSG	LG Electronics Inc.	discussion
R2-1709281	Idle Measurement Enhancement using UE speed	LG Electronics Inc.	discussion
R2-1709299	Mobility states and state based scaling	Ericsson	discussion
R2-1709596	Speed dependant mobility related parameters in NR IDLE or INACTIVE mode	Samsung Electronics	discussion
R2-1709630	CSG Type Functionality for NR	Qualcomm Incorporated, Deutsche Teleko	discussion
R2-1709633	Cell Barring and Reservations for NR	Qualcomm Incorporated	discussion

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10.4.2.6 Idle/inactive paging

Including beam related aspects, response driven paging and calculation of paging occasion.

R2-1707914	Paging in multi-beam operation	CATT	discussion
R2-1709249	Configurable Paging Procedure for NR	Nokia, Nokia Shanghai Bell	discussion
R2-1707688	Paging in NR – Beamforming Aspects	Samsung R&D Institute India	discussion
R2-1707689	PO Determination for Paging Reception	Samsung R&D Institute India	discussion
R2-1707704	Discussion on paging in NR	OPPO	discussion
R2-1707761	Paging occasion and time slot in NR	OPPO	discussion
R2-1707977	Paging design consideration	Spreadtrum Communications	discussion
R2-1708093	Paging for wideband carrier in NR	Samsung	discussion
R2-1708112	Calculation of paging occasion in NR	ZTE Corporation	discussion
R2-1708152	Overhead Reduction for Paging in Multi-beam Operation	ZTE Corporation	discussion
R2-1708177	DRX in idle state	Ericsson	discussion
R2-1708216	Definition of PF and PO	Huawei, HiSilicon	discussion
R2-1708217	Efficiency of direct and response-driven paging	Huawei, HiSilicon	discussion
R2-1708257	Overhead Reduction for Paging in Multi-beam Operation	MediaTek Inc.	discussion
R2-1708434	NR paging design	vivo	discussion
R2-1708456	CN paging DRX in RRC_IDLE	LG Electronics Inc.	discussion
R2-1708536	Paging delivery in NR	Ericsson	discussion
R2-1708537	Response-driven paging to reduce beam sweeping overhead in NR	Ericsson	discussion
R2-1708538	DRAFT LS on maximum DRX value for NR in Release 15	Ericsson	LS out
R2-1708745	Paging in High Frequency	InterDigital	discussion
R2-1708746	Paging Indicator Design	InterDigital	discussion
R2-1708819	Calculation of paging occasion	Intel Corporation	discussion
R2-1709178	Providing more information relating to MT data in Paging	Beijing Xiaomi Mobile Software	discussion
R2-1709248	Comparison between different paging schemes	Nokia, Nokia Shanghai Bell	discussion
R2-1709250	Evaluation of Uplink Access using Paging Indicators	Nokia, Nokia Shanghai Bell	discussion
R2-1709528	UE Assisted Paging	Convida Wireless LLC	discussion
R2-1709554	Paging mechanism with beam sweeping	Huawei Technologies France	discussion
R2-1709641	Use of multiple P-RNTIs for NR paging	Qualcomm Incorporated	discussion
R2-1709642	Consideration on NR paging	Qualcomm Incorporated	discussion

10.4.3 UE capability specification

Note, this agenda item is related to specification structure and principle. Discussion of UE capabilities for NSA and SA will take place in agenda item 10.2.6

10.4.3.1 TS

Latest 38.304, other rapporteur inputs, anything related to specification methodology.

R2-1708750	Draft TS 38.306 v0.0.3 Rel-15 NR_newRAT-Core	Intel Mobile Communications	draft TS38.306 0.0.3

=> Endorsed

R2-1708820	Open issues on TS38.306	Intel Corporation	discussion

Agreements:

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1 NR UE category, if needed, are included into TS38.306 to indicate a peak data rate.
1a If concluded that peak data rate is derived from other parameters (e.g BCs etc) then the derivation should be captured in 36.306
2 NR part of NSA related capabilities are captured into TS38.306. LTE part of NSA related capabilities are captured in TS 36.306 (with linking and referencing between specs)
FFS Location of common part of NSA related capabilities
3 UE capability ASN.1 and procedure parts remain in RRC spec
FFS Whether it is possible to avoid duplication of procedural text between LTE and NR specs for the retrieval for NR capabilities

=> Offline discussion to conclude appropriate question relating to the definition of the parameters related to UE category that determine the data rate. Can be added to the LS agreed to be sent following the capability coordination discussion. (Offline discussion ??)

R2-1709622 Handling of UE capability related parts in TS38.331 Huawei, HiSilicon discussion
R2-1707832 Excluding ASN.1 from TS38.306 Nokia, Nokia Shanghai Bell discussion

11 Comebacks

This agenda item will be used during the meeting. No documents are supposed to be submitted by delegates.

11.1 LTE breakout sessions

11.1.1 Report from Break-Out session

Report from session on Rel-14 LTE and NR UP

R2-1709663 Report from Break-Out Session, Vice-Chair (InterDigital)
CBF: Report from LTE Break-Out Session, Vice-Chair (InterDigital)
=> Approved
- R2-1709806 double allocated

R2-1709347 Correction to eLAA configuration HTC Corporation CR Rel-14 36.331 14.3.0 LTE_eLAA-Core 3041 F
=> Keep deleted sentence. Change " If the field is absent " to "If the field is not configured"
=> Agreed in R2-1709947

R2-1709806 Introduction of new NS values for V2X sidelink communication Huawei, HiSilicon CR Approval 36.331 2978 2 B LTE_V2X-Core Rel-14 14.3.0
R2-1709956 Introduction of new NS values for V2X sidelink communication Huawei, HiSilicon CR Approval 36.331 2978 2 B LTE_V2X-Core Rel-14 14.3.0
=> Agreed

R2-1709796 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR 36.321 1147 2
=> Agreed

R2-1709797 Corrections to random selection for P2X related V2X sidelink communication LG Electronics Inc. CR 36.331 2997 2
=> Agreed

R2-1709798 [Draft] LS to RAN1 on P2X LG Electronics Inc.
=> Approved in R2-1709948

R2-1709846 Additional OTDOA Capabilities Qualcomm IncorporatedCR 36.355 0183

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=> Agreed

R2-1709773 Correction on UE category combination in 36.306 Huawei, HiSilicon CR Rel-14 36.306 14.3.0 LTE_UL_CAP_enh-Core 1494 F

=> Agreed

R2-1709778 [DRAFT] Reply LS on QoS support over PC5 Nokia, Nokia Shanghai Bell discussion Approval - - - - FS_feD2D_IoT_relay_wearable Rel-15

=> Approved in R2-1709949

R2-1709783 [DRAFT] LS on SPS and SR for sTTI Huawei, HiSilicon

- Nokia suggest that add that only one SR is delivered to L1

=> Add sentence to clarify that only one SR will be delivered to L1

=> Revised in R2-1709950

R2-1709950 [DRAFT] LS on SPS and SR for sTTI Huawei, HiSilicon

=> Approved in R2-1709972

R2-1709784 [draft] Reply LS to RAN1 on DRX Ericsson

=> Approved in R2-1709951

11.1.2 Report from Break-Out session

Report from session on Rel-14 and Rel-15 LTE

R2-1709664 Report from Break-Out Session, Vice-Chair (CMCC)

CBF: Report from LTE Break-Out Session, Vice-Chair (CMCC)

=> Relating to R2-1709631 the agreement is modified to
"2 The UE does not transmit on autonomous access resources when an UL grant is received for the same TTI, for the same cell case"

=> Approved

R2-1708387 Correction on TAT in RACH-less handover in 36.331 Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_eMob-Core 2994 F

- Samsung would like to know the relation between this CR and the issue.
- Nokia think removing the action is not proper.

=> Find a better way rather than removing the action.

CBF: => Revised in R2-1709736 (offline 201)

R2-1709736 Correction on TAT in RACH-less handover in 36.331 Huawei, HiSilicon CR Rel-14 36.331 14.3.0 LTE_eMob-Core 2994 F

=> Inserted text should be at level 2 and 3 (not 3 and 4)

=> Agreed in R2-1709962

R2-1709735 Correction on TAT in RACH-less handoverHuawei 36.321 CR

=> Revised in R2-1709963

R2-1709963 Correction on TAT in RACH-less handoverHuawei 36.321 CR

=> Agreed

R2-1708974 Correction of RACH-less handover Kyocera CR Rel-14 36.300 14.3.0 LTE_eMob-Core 1032 2 F

- Qualcomm think it is not necessary.
- Samsung support the clarification.

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- Intel suggest offline discussion for better wording.

CBF: => Revised in R2-1709737 for better wording. (offline 202)

R2-1709737 Correction of RACH-less handover Kyocera CR Rel-14 36.300 14.3.0 LTE_eMob-Core 1032 2 F

=> Agreed, but then revised:
[MCC]: Revision marks on the coversheet.

⇒ **Agreed in R2-1709761.**

eVoLTE

R2-1709210 RAN-recommended bit rate restriction Nokia, Nokia Shanghai Bell CR Rel-14 36.300 14.3.0 LTE_VoLTE_ViLTE_enh-Core 1053 F

CBF:=> Revised in R2-1709739 (offline 203) and Draft reply LS in R2-1709740 to SA4, CT3 (Nokia)

R2-1709739 RAN-recommended bit rate restriction Nokia, Nokia Shanghai Bell CR Rel-14

=> Agreed

R2-1709740 [Draft] Reply LS

=> Removed "the eNB guarantees"
=> Fix WI code
=> Approved in R2-1709930

eViLTE

CBF: => Offline discussion on how to progress the issue of local caching (CMCC). Report to the main session. Report in R2-1709745 (offline number 2000)

R2-1709745 Report of RAN2#99 offline discussion #2000 on UE assistance information for local caching (CMCC)

Agreements:
- UE assistance information bit is introduced for local caching when local cache is co-located with the eNB.
- Introducing this UE assistance information bit is not intended to change the specified architecture for local caching in RAN3 and/or open discussions for specifying a new local-caching architecture as part of this WI.
- The mechanism to be specified shall not make eNB service-aware.

✉ **[99#33][LTE/eViLTE] UE assistance information (CMCC)**
Progress on details of UE assistance method.
2 phase discussion to progress solution and then prepare CRs
Intended outcome: Report to next meeting and draft CRs to RAN2#100
Deadline: Thursday November meeting

CBF: => Offline discussion on how to progress on awareness of critical data. Report the result to main session in R2-1709746 (offline number 299). (Intel)
- Update from offline: Some companies still have doubts on the benefits. Companies are invited to bring contributions raising concerns and providing draft CRs to next meeting.

UDC

R2-1708359 Update of Description and Evaluation Results for Deflate CATT CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0002 F

=> Only capture Simulation results with RFC 1951 (with 1 byte UDC header) for both cases.
=> Indicate the results without cross check.
CBF: => Revised in R2-1709742 (offline number 222)

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R2-1709742 Update of Description and Evaluation Results for Deflate CATT CR Rel-15 36.754 15.0.0 FS_LTE_UDC 0002 F

=> Agreed, but then revised:
[MCC]: Source to TSG should be R2

⇒ **Agreed in R2-1709762.**

UAV

CB on Friday: =>Draft LS in R2-1709744 to consult SA2, SA3 and RAN3 the above agreement. (DOCOMO) (offline number 286)

R2-1709744 [DRAFT] LS on Certification/License and Identification of Aerial Vehicles DOCOMO LS out

=> Align all uses of the terms " certificate/licence/authorization "
=> Approved in R2-1709973

CBF: => Draft LS to RAN1 in R2-1709747 to inform our understanding on latency (offline number 0824) (DOCOMO)

R2-1709747 [DRAFT] LS on latency requirement for Aerial Vehicles DOCOMO LS out

=> Change TS to TR
=> Approved in R2-1709974

✉ **[99#06][LTE/UAV] Align simulation assumption (Qualcomm)**
Align assumptions including the RAN1 part.
Intended outcome: Aligned assumptions
Deadline: Thursday 2017-08-31
=> The email discussion report is noted in R2-1709899.

feLAA

CBF: Draft LS to RAN1 in R2-1709754 to inform our agreements. (Offline number 543) (Nokia)

R2-1709929 DRAFT LS on RAN2 agreements on Enhancements to LTE operation in unlicensed spectrum Nokia

=> Approved in R2-1709967

11.1.3 Report from Break-Out session

Report from session on Rel-13/14 NB-IoT, Rel-13/14 MTC, Rel-15 NB-IoT WIs

R2-1709665 Report from Break-Out Session, Session Chair (MediaTek)

CBF: Report from LTE Break-Out Session, Session Chair (MediaTek)
=> Approved

11.1.4 Report from Break-Out session

Report from session on Rel-15 MTC

R2-1709666 Report from Break-Out Session, Session Chair (Ericsson)

CBF: Report from LTE Break-Out Session, Session Chair (Ericsson)
=> Approved

11.1.5 Report from Break-Out session

Report from session on Rel-15 Positioning WI

R2-1709667 Report from Break-Out Session, Session Chair (Huawei)

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CBF: Report from LTE Break-Out Session, Session Chair (Huawei)
=> Approved

R2-1709755 Draft LS on UE GNSS RTK measurement for high accuracy positioning Nokia
LS to RAN4 Cc: RAN1
=> Revised to R2-1709935

R2-1709935 Draft LS on UE GNSS RTK measurement for high accuracy positioning Nokia
LS to RAN4 Cc: RAN1
=> Approved in R2-1709961

11.1.6 Report from Break-Out session

Report from session on Rel-15 V2X WI

R2-1709668 Report from Break-Out Session, Session Chair (Intel)
CBF: Report from LTE Break-Out Session, Session Chair (Intel)

11.2 Main session

This section contains a temporary list of comebacks (press F9 to update while the cursor is inside the list).

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- => Draft LS in R2-1709915 (Huawei, Offline discussion #52)
- => Discuss offline how to respond and try to avoid overlap with aspects that RAN1 is expected to cover. (Ericsson, Offline discussion #02)
- => Check whether a merge with other CRs is needed. UE capability aspect can be discussed offline. (Offline discussion #29)
- => Discuss offline the potential issue with the CR preventing a broadcast only UE. (Intel, Offline discussion #04).
- => To be merged with CR on NS value extension in R2-1708477 (Nokia, Offline discussion #06). Merged CR should have an appropriate title to cover both issues.
- => Offline discussion to try to conclude (DOCOMO, Offline discussion #08)
- => Revised in R2-1709733 (Offline discussion #11)
- Potential agreement to be discussed further offline:
- => Revised in R2-1709813 (Offline discussion #17)
- => Revised in R2-1709814 (Offline discussion #18)
- => Offline discussion to progress the table to clearly capture the scope of features that need to be worked on within this WI. Also conclude whether to send LS to SA2/CT1/etc on how the UE behaves if desired services (e.g. MBMS) are not available via the 5GC (Offline discussion #25)
- => Offline discussion to see is RAN2 can respond (e.g. explain our desire that TRP is not visible in the spec). Draft LS in R2-1709815 (ZTE, Offline discussion #19).
- => Revised in R2-1709936
- => Offline discussion to identify the key stage 2 aspects that still need to be address in this AI. May be the progressed by email to the next meeting. (ZTE, Offline discussion #28)
- => Offline discussion to conclude on whether NR or LTE is used to encode the measurement results and to start to progress on the detailed content of the measurement results. (Vivo, Offline discussion #30)
- => Draft LS to RAN4 to ask if a UE capability "need for 1 Tx operation" is required (e.g. if the need for 1 Tx operation applies to all operating with a given band combination or only some UEs), and if so with what granularity it should be provided (e.g. per band combination). (Nokia, Offline discussion #31). Draft LS in R2-1709843
- => Proposal above to be progressed at lunch 14:15.
- => Offline discussion to progress the issue. The following text can be used as a starting point in that offline: (Nokia, Offline discussion #37):
- - Detail points to be added to the email discussion scope.
- => Revised to R2-1709928
- => Revised in R2-1709869 (Offline discussion #43)
- => Revised in R2-1709870 (Offline discussion #44)
-
- Tentative email discussion
- => Offline discussion to progress FFS1 and FFS2 points. Can also consider the LTE and NR procedures that would correspond to this structure (Ericsson, Offline discussion #45)
- => Revised in R2-1709871 (Ericsson, Offline discussion #45)

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- => Send LS to RAN1/4 to explain that we have agreed and captured the measurement model and that the cell quality derivation will be captured in RRC. Draft LS in R2-1709874, ZTE, Offline discussion #47
- => Offline activity to try to conlcude on the additional information (periodicity, time offset, window) for both SSB and CSI-RS based on received parameters from RAN1. (Ericsson, Offline discussion #48)
- => Offline discussion to progress on proposal 1 (Samsung, Offline discussion #49)
- => Revised in R2-1709891 (Offline discussion #51)
- CBF: Report from LTE Break-Out Session, Vice-Chair (InterDigital)
- => Revised in R2-1709950
- CBF: => Revised in R2-1709736 (offline 201)
- CBF: => Revised in R2-1709737 for better wording. (offline 202)
- **CBF:=>** Revised in R2-1709739 (offline 203) and Draft reply LS in R2-1709740 to SA4, CT3 (Nokia)
- **CBF:** => Offline discussion on how to progress the issue of local caching (CMCC). Report to the main session. Report in R2-1709745 (offline number 2000)
- **CBF:** => Offline discussion on how to progress on awareness of critical data. Report the result to main session in R2-1709746 (offline number 299). (Intel)
- **CBF:** => Revised in R2-1709742 (offline number 222)
- **CB on Friday:** => Draft LS in R2-1709744 to consult SA2, SA3 and RAN3 the above agreement. (DOCOMO) (offline number 286)
- **CBF:** => Draft LS to RAN1 in R2-1709747 to inform our understanding on latency (offline number 0824) (DOCOMO)
- **CBF:** Draft LS to RAN1 in R2-1709754 to inform our agreements. (Offline number 543) (Nokia)
- CBF: Report from LTE Break-Out Session, Session Chair (MediaTek)
- CBF: Report from LTE Break-Out Session, Session Chair (Ericsson)
- CBF: Report from LTE Break-Out Session, Session Chair (Huawei)
-

12 Outgoing LSs

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.

R2-1708390	[DRAFT] Reply LS to SA2 on progress of eVoLP	Huawei	LS out	Rel-15	FS_eVoLP SA2 SA4
R2-1708597	Discussion on response to SA2 LS R2-1707652 on low latency Rel-15	Vodafone	discussion		
	=> Revised in R2-1709670				
R2-1709670	Discussion on response to SA2 LS R2-1707655 on low latency discussion	Vodafone Group Plc	Rel-15		

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13 Any other business

14 Closing of the meeting (17:00)

The meeting was closed on Friday, 25.08.2017, at 18:04 by the chairman.

Annex A: List of participants

RAN2#99 participants list is at: http://webapp.etsi.org/3GPPRegistration/fViewPart.asp?mid=17066

Total number of participants: 269 (registered 343)

Annex B: List of Tdocs

The list of tdocs of this RAN2#99 is attached to this report.

Total number of tdocs was 2394 of which 2368 tdocs were available.

Annex C: Incoming liaison statements

TDoc	Title	Source	Status	Rel	Related WIs	To	Cc	Original LS

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R2-1707603	Liaison Statement from NGMN Alliance to 3GPP on Test Results of Technology Building Blocks phase of the Trial and Testing Initiative (contact: KT Corp, Telecom Italia	NGMN Alliance	noted	Rel-15		RAN1	RAN2, RAN3, RAN4	R2-1707603_170629_Liaison Statement NGMN TTI TTBB to 3GPP final
R2-1707604	LS on E-UTRA connected to 5GC (C1-172641; contact: Qualcomm)	CT1	noted	Rel-15	5GS_Ph1-CT	SA1	SA2, CT6, RAN2	C1-172641
R2-1707605	LS on Solution 9 (Option 2) for CN overload control for CP data (C1-172759; contact: Huawei)	CT1	noted	Rel-14	CIoT_Ext-CT	SA2, RAN3	RAN2	C1-172759
R2-1707606	Reply LS on RAN-Assisted Codec Adaptation (C3-173176; contact: Nokia)	CT3	noted	Rel-14	LTE_VoLTE_ViLTE_enh-Core	SA4	RAN2, SA2	C3-173176
R2-1707607	LS on UL HARQ processes and collision handling for short processing time with 1ms TTI (R1-1709243; contact: Sharp)	RAN1	noted	Rel-15	LTE_sTTIandPT-Core	RAN2		R1-1709243
R2-1707608	LS on the conclusions for the SI on a simplified HS-SCCH for UMTS (R1-1709326; contact: Ericsson)	RAN1	withdrawn	Rel-15	FS_UTRA_simple_HSSCCH	RAN2	RAN3	R1-1709326
R2-1707609	Response LS on resource reselection for P2X UEs (R1-1709334; contact: Nokia)	RAN1	noted	Rel-14	LTE_V2X-Core	RAN2		R1-1709334
R2-1707610	LS on enhanced scheduling for UMTS (R1-1709567; contact: Huawei)	RAN1	withdrawn	Rel-15	FS_UTRA_CA_sched_enh	RAN2	RAN3	R1-1709567
R2-1707611	Monitoring of partial NPDCCH search spaces (R1-1709716; contact: Qualcomm)	RAN1	withdrawn	Rel-13	NB_IOT-Core	RAN2		R1-1709716
R2-1707612	LS on NB-IoT small cell (R1-1709780; contact: Ericsson)	RAN1	noted	Rel-15	NB_IOTenh2-Core	RAN4	RAN2	R1-1709780
R2-1707613	LS on RAN1 agreements on CA (R1-1709826; contact: Ericsson)	RAN1	noted	Rel-15	LTE_eV2X-Core	RAN2, RAN4		R1-1709826
R2-1707614	LS on System acquisition time reduction for Rel-15 LTE MTC (R1-1709834; contact:	RAN1	noted	Rel-15	LTE_eMTC4-Core	RAN2, RAN4		R1-1709834
R2-1707615	LS on early data transmission in MTC and NB-IoT in Rel-15 (R1-1709835; contact: Ericsson)	RAN1	noted	Rel-15	LTE_eMTC4-Core, NB_IOTenh2-Core	RAN2		R1-1709835
R2-1707616	LS on RAN1 agreements on key performance indicator, evaluation assumptions, and channel modelling (R1-1709862; contact: Ericsson)	RAN1	noted	Rel-15	FS_LTE_Aerial	RAN2		R1-1709862
R2-1707617	LS on RAN1 agreements on channel modelling (R1-1709869; contact: Ericsson)	RAN1	noted	Rel-15	FS_LTE_Aerial	RAN2		R1-1709869
R2-1707618	LS on NR UL SPS / UL transmission without UL grant (R1-1711686; contact: NTT DOCOMO)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1711686
R2-1707619	LS on Single UL transmission (R1-1711878; contact: NTT DOCOMO)	RAN1	noted	Rel-15	FS_NR_newRAT	RAN2, RAN3, RAN4		R1-1711878
R2-1707620	LS on Beam Aspects of NR RACH (R1-1711880; contact: Huawei)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1711880
R2-1707621	Reply LS response on reading time index indication for RRM measurements (R1-1711966; contact: Intel)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1711966
R2-1707622	Reply LS response on NR basic handover (R1-1711987; contact: Samsung)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1711987
R2-1707623	Response LS on Support for fake gNB detection mechanisms (R1-1711997;	RAN1	noted	Rel-15	NR_newRAT-Core	SA3	RAN2, RAN4	R1-1711997

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	contact: Nokia)							
R2-1707624	LS on Bandwidth Part Operation in NR (R1-1711998; contact: MediaTek)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2, RAN4		R1-1711998
R2-1707625	LS on power sharing for LTE-NR Dual Connectivity (R1-1711999; contact: Ericsson)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN4	RAN2	R1-1711999
R2-1707626	LS on support of multi-TRP transmission in NR (R1-1712000; contact: Intel)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2	RAN3	R1-1712000
R2-1707627	LS on NR initial access and mobility (R1-1712001; contact: NTT DOCOMO)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1712001
R2-1707628	Reply LS on PDCCH design (R1-1712005; contact: Ericsson & CATT)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1712005
R2-1707629	LS on NR Beam Management (R1-1712007; contact: Qualcomm)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1712007
R2-1707630	LS on HARQ operation (R1-1712008; contact: Nokia)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1712008
R2-1707631	Reply LS on CSI-RS Design for Beam Management (R1-1712009; contact: NTT DOCOMO)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN4	RAN2	R1-1712009
R2-1707632	Reply LS on MBMS Bearer Event Notification (R3-172007; contact: Ericsson)	RAN3	noted	Rel-15	MBMS_Mcservices, TEI15	SA6	SA2, RAN2	R3-172007
R2-1707633	Reply to LS on EUTRAN sharing enhancement (R3-172026; contact: Ericsson)	RAN3	noted	Rel-14	TEI14	RAN2, RAN	SA2, SA	R3-172026
R2-1707634	LS on RAN4 agreements for FeD2D SI (R4-1706074; contact: Intel)	RAN4	noted	Rel-14	FS_feD2D_IoT_relay_wearable	RAN1, RAN2		R4-1706074
R2-1707635	LS on RSRP range (R4-1706175; contact: Huawei)	RAN4	noted	Rel-13	LTE_MTCe2_L1-Core	RAN2		R4-1706175
R2-1707636	Reply LS on UE measurement capabilities across LTE and NR (R4-1706905; contact: Nokia)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN2		R4-1706905
R2-1707637	Reply LS on the feasibility of DC-related mobility enhancements in NR (R4-1706913; contact: Huawei)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN2	RAN1	R4-1706913
R2-1707638	Reply LS on support of supplementary uplink in NR (R4-1706967; contact: CMCC)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN1, RAN2		R4-1706967
R2-1707639	LS on spectrum utilization (R4-1706974; contact: Vodafone)	RAN4	noted	Rel-15	NR_newRAT-Core	RAN1, RAN2		R4-1706974
R2-1707640	Reply LS on the support of Unicast and Groupcast transmission over PC5 for eV2X (S2-173610; contact: LGE)	SA2	noted	Rel-15	FS_eV2XARC	RAN	SA, SA1, SA3, RAN2	S2-173610
R2-1707641	LS on EUTRAN sharing enhancement (S2-173701; contact: Ericsson)	SA2	noted	Rel-15	TEI14	RAN2, RAN, SA, SA5	RAN3	S2-173701
R2-1707642	Reply LS on QoS support over PC5 (S2-173877; contact: Nokia)	SA2	noted	Rel-15	FS_REAR	RAN2		S2-173877
R2-1707643	Reply LS on mapping between service types and V2X frequencies (S2-174064; contact: Huawei)	SA2	available	Rel-14	V2XARC	RAN2, CT1		S2-174064
R2-1707644	Reply LS on Reply LS to RAN3 on support of redirection for VoLTE (S2-174069; contact: Nokia)	SA2	noted	Rel-14	LTE_VoLTE_ViLTE_enh-Core	RAN3	RAN2	S2-174069
R2-1707645	Reply LS on RAN2 agreements on NR paging (S2-174801; contact: LGE)	SA2	noted	Rel-15	NR_newRAT-Core	RAN2, RAN3		S2-174801
R2-1707646	LS on progress of enhanced VoLTE performance (S2-	SA2	noted	Rel-15	FS_eVoLP	RAN2	SA4	S2-174844

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	174844; contact: Huawei)							
R2-1707647	Reply LS on UE capabilities for MBMS (S2-175071; contact: Qualcomm)	SA2	noted	Rel-14	LTE_feMTC-Core, NB_IOTenh-Core	RAN1, RAN2, RAN3	CT3, CT4	S2-175071
R2-1707648	Reply LS on NR Idle Mode procedures (S2-175089; contact: Qualcomm)	SA2	noted	Rel-15	5GS_Ph1, LTE_5GCN_connect-Core	RAN2, RAN3, CT1		S2-175089
R2-1707649	Reply LS on the need for EPS Bearer ID knowledge in NG-RAN for (inter-RAT) inter-system handover (S2-175157; contact: NTT DOCOMO)	SA2	noted	Rel-15	5GS_Ph1	RAN3	RAN2	S2-175157
R2-1707650	Reply LS on Supported features by 5GC for E-UTRA connected to 5G CN (S2-175192; contact: Nokia)	SA2	noted	Rel-15	5GS_Ph1	RAN2	CT1, SA5, RAN3, SA1, RAN, SA	S2-175192
R2-1707651	Reply to LS on Dual Connectivity with 5GC (S2-175197; contact: Nokia)	SA2	noted	Rel-15	5GS_Ph1	RAN3	RAN2	S2-175197
R2-1707652	LS reply on NAS Reflective QoS (S2-175244; contact: Intel & MediaTek)	SA2	noted	Rel-15	NR_newRAT-Core	RAN2, RAN3		S2-175244
R2-1707653	Reply LS on RAT restriction in 5GS (S2-175261; contact: Qualcomm)	SA2	noted	Rel-15	5GS_Ph1	CT1, RAN2	SA1	S2-175261
R2-1707654	LS on NR indication (S2-175270; contact: Qualcomm)	SA2	noted	Rel-15	EDCE5	RAN2	CT1, SA1	S2-175270
R2-1707655	LS on EPC QoS aspects for TSG RAN's lower latency features (S2-175276; contact: Ericsson)	SA2	noted	Rel-15	LTE_sTTIandPT-Core, EDCE5, NR_newRAT-Core	RAN, SA, RAN1, RAN2, RAN3	SA1, CT1	S2-175276
R2-1707656	LS on Status Icons related to 5G (S2-175303; contact: MediaTek)	SA2	noted	Rel-15	5GS_Ph1, NR_newRAT-Core, LTE_5GCN_connect-Core	GSMA FNW, NGMN	SA, SA1, RAN, CT, CT1, RAN2	S2-175303
R2-1707657	Response LS on LTE connectivity to 5G-CN (S2-175310; contact: Qualcomm)	SA2	noted	Rel-15	5GS_Ph1, NR_newRAT-Core	RAN2	RAN3	S2-175310
R2-1707658	Reply LS on on providing WT MAC address to the UE using eNB signalling (S3-171528; contact: Intel)	SA3	noted	Rel-14	LTE_WLAN_aggr-Core	RAN2	RAN3	S3-171528
R2-1707659	Reply LS on LTE call redirection to GERAN (S3-171554; contact: Ericsson)	SA3	noted	Rel-12	TEI12	RAN2, CT1	RAN3	S3-171554
R2-1707660	Reply LS on RAN-Assisted Codec Adaptation (S4-170720; contact: Intel)	SA4	noted	Rel-14	LTE_VoLTE_ViLTE_enh-Core	CT3, RAN2	SA2	S4-170720
R2-1707661	LS on eVoLP parameters (S4-AHM355; contact: Qualcomm)	SA4	noted	Rel-15	FS_eVoLP	SA2, RAN2	RAN3	S4-AHM355
R2-1707662	Reply LS to RAN3 on MBMS bearer event notification (S6-171129; contact: Motorola Solutions)	SA6	noted	Rel-15	MBMS_Mcservices	RAN3, SA2	RAN2	S6-171129
R2-1707663	LS on support of CACC and platooning applications by 3GPP systems (SAE International)	SAE DSRC Technical Committee	noted	Rel-15		SA2, RAN2	SA1, RAN1	SAE DSRC TC LS 06132017-rev5
R2-1709672	LS on DL & UL channel bandwidth for NR (R4-1706978; contact: Intel)	RAN4	noted	Rel-15	FS_NR_newRAT	RAN1, RAN2		R4-1706978
R2-1709673	Reply LS on Closed Subscriber Group in 5GS (RP-171479; contact: Qualcomm)	RAN	withdrawn	Rel-15	SMARTER, NR_newRAT	SA1, RAN2	SA2, SA3, RAN3	RP-171479
R2-1709674	Reply LS to RAN2 on Counter Check Procedure and SCG	SA3	noted	Rel-15	NR_newRAT-Core	RAN2		S3-172077

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	SRB integrity check failure (S3-172077; contact: Nokia)							
R2-1709675	Reply LS on algorithm selection in E-UTRA-NR Dual Connectivity (S3-172078; contact: Ericsson)	SA3	noted	Rel-15	EDCE5	RAN2, RAN3, CT1		S3-172078
R2-1709676	LS on NR security input parameters (S3-172079; contact: Qualcomm)	SA3	noted	Rel-15	NR_newRAT	RAN2	ETSI SAGE	S3-172079
R2-1709677	Response LS on security keys in EN-DC and actions upon DRB IP check failure (S3-172080; contact: Ericsson)	SA3	noted	Rel-15	NR_newRAT-Core	RAN2		S3-172080
R2-1709678	Reply LS on encrypting broadcasted positioning data (S3-172134; contact: Ericsson)	SA3	noted	Rel-15	LCS_LTE_acc_enh-Core	RAN2	SA2	S3-172134
R2-1709679	Reply LS on PC5 Secure Communication (S3-172153; contact: Intel)	SA3	noted	Rel-15	FS_REAR	SA2, RAN2		S3-172153
R2-1709835	Response LS on default DRB establishment for PDU session (S2-176409; Contact: InterDigital)	SA2	withdrawn	Rel-15	5GS_Ph1	RAN2	RAN3	S2-176409
R2-1709847	LS on RRC parameters for NR (R1-1714969; contact: Ericsson)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1714969
R2-1709848	Response LS on default DRB establishment for PDU session (S2-176475; Contact: InterDigital)	SA2	noted	Rel-15	5GS_Ph1	RAN2	RAN3	S2-176475
R2-1709861	LS on multiple SSBs within a wideband carrier (R1-1715071; contact: Ericsson)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN2		R1-1715071
R2-1709862	LS on RAN1 agreements on Enhancements to LTE operation in unlicensed spectrum (R1-1715080; contact: Nokia)	RAN1	available	Rel-15	LTE_unlic	RAN2		R1-1715080
R2-1709863	LS on response to EPC QoS aspects for TSG RAN's lower latency features (R1-1715089; contact: Ericsson, Vodafone)	RAN1	noted	Rel-15	EDCE5, NR_newRAT, LTE_HRLLC, LTE_sTTIandPT	SA2, RAN2	SA1, CT1, RAN, SA, RAN3	R1-1715089
R2-1709882	Support of early contention resolution in NB-IoT (R1-1714719; contact: Qualcomm)	RAN1	noted	Rel-13	NB_IOT-Core	RAN2	RAN3	R1-1714719
R2-1709883	LS to RAN2 on Text Proposals for 3GPP TR 36.746 (R1-1715120; contact: Intel)	RAN1	noted	Rel-15	FS_feD2D_IoT_relay_wearable	RAN2	RAN4	R1-1715120
R2-1709884	"New configuration and UE capabilities for NB-IoT (R1-1715149; contact: Qualcomm)"	RAN1	noted	Rel-14	NB_IOTenh-Core	RAN2		R1-1715149
R2-1709885	LS response on spectrum utilization (R1-1715184; contact: Huawei)	RAN1	noted	Rel-15	NR_newRAT-Core	RAN4, RAN2, RAN3		R1-1715184

79 incoming LS, of which 72 were noted. Two LS were not discussed and will be moved to RAN2#99bis.

Annex D:
Outgoing liaison statements

TDoc	Title	Release	Related WIs	To	Cc

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R2-1709705	LS on CSG support in NB-IoT	Rel-15	NB_IOTenh2-Core	RAN3, RAN4	RAN1
R2-1709782	Reply LS on Relay UE discovery	Rel-15	FS_feD2D_IoT_relay_wearable	RAN1	
R2-1709800	LS on RACH agreements	Rel-15	NR_newRAT-Core	RAN1	
R2-1709801	Response LS on BWP operation in NR	Rel-15	NR_newRAT-Core	RAN1	
R2-1709802	LS on Transport Block Sizes	Rel-15	NR_newRAT-Core	RAN1	
R2-1709803	LS on SDAP header design	Rel-15	NR_newRAT-Core	SA2	
R2-1709804	LS to SA3 on RAN2 agreements on jumbo frames	Rel-15	NR_newRAT-Core	SA3	
R2-1709816	Reply LS on spectrum utilization	Rel-15	NR_newRAT-Core	RAN4, RAN1	
R2-1709851	Reply LS on UE measurement capabilities across LTE and NR	Rel-15	NR_newRAT-Core	RAN4	
R2-1709902	LS on RAR reception for NB-IoT	Rel-14	NB_IOT-Core	RAN1	
R2-1709930	RAN-assisted codec adaptation restriction	Rel-15	LTE_VoLTE_ViLTE_enh-Core	SA4, CT3	
R2-1709948	Response LS to RAN1 on P2X	Rel-14	LTE_V2X-Core	RAN1	
R2-1709949	Reply LS on QoS support over PC5	Rel-15	FS_feD2D_IoT_relay_wearable	SA2	RAN1
R2-1709951	Reply LS on sPDCCH monitoring in sTTI	Rel-15	LTE_sTTIandPT	RAN1	
R2-1709954	LS on Baseband capability signaling	Rel-15	NR_newRAT-Core	RAN4	RAN1
R2-1709955	LS on NR handover related parameters	Rel-15	NR_newRAT-Core	RAN1, RAN4	
R2-1709961	LS on UE GNSS RTK measurement for high accuracy positioning	Rel-15	LCS_LTE_acc_enh-Core	RAN4	RAN1
R2-1709967	LS on RAN2 agreements on Enhancements to LTE operation in unlicensed spectrum	Rel-15	LTE_unlic-Core	RAN1	
R2-1709969	Reply LS on NR security input parameters	Rel-15	NR_newRAT	SA3	ETSI SAGE, SA2
R2-1709971	LS on measurement model for cell quality derivation in NR	Rel-15	NR_newRAT-Core	RAN1, RAN4	
R2-1709972	LS on SPS and SR for sTTI	Rel-15	LTE_sTTIandPT	RAN1	
R2-1709973	LS on Certification/License and Identification of Aerial Vehicles	Rel-15	FS_LTE_Aerial	SA2	RAN3, SA3
R2-1709974	LS on latency requirement for Aerial Vehicles	Rel-15	FS_LTE_Aerial	RAN1	
R2-1709975	Reply LS to SA2 on progress of eVoLP	Rel-15	FS_eVoLP	SA2	SA4, RAN3
R2-1709976	Reply LS to SA2 on 5QIs for URLLC	Rel-15	NR_newRAT-Core, LTE_HRLLC, LTE_sTTIandPT	SA2	RAN1
R2-1709977	LS reply on extension of NS and CA_NS signalling space	Rel-14	TEI14	RAN4	
R2-1709978	LS on NR indication	Rel-15	NR_newRAT-Core	SA2	CT1, SA1, GSMA FNW, NGMN
R2-1709979	LS on UE categories and capabilities	Rel-15	NR_newRAT-Core	RAN1, RAN4	RAN
R2-1709980	LS reply on Support for fake gNB detection mechanismss	Rel-15	NR_newRAT	SA3	RAN1, RAN4
R2-1709981	LS on CN node selection for LTE features when E-UTRA is connected to 5G CN	Rel-15	5GS_Ph1	CT1	SA2
R2-1709982	Response LS on security keys in EN-DC	Rel-15	NR_newRAT-Core	SA3	
R2-1709983	Reply LS on multiple SSBs within a wideband carrier	Rel-15	NR_newRAT-Core	RAN1	

32 outgoing LS.

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Annex E:
List of agreed CRs

Agreed CRs:

Petitioners' Exhibit 1012
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TDoc	Title	Source	Rel	Spec	Related WIs	CR	Rev	Ca
R2-1707861	RoHC profile support for CIoT-only NB-IoT UE	Qualcomm Incorporated	Rel-13	36.306	NB_IOT-Core	1485		F
R2-1707862	RoHC profile support for CIoT-only NB-IoT UE	Qualcomm Incorporated	Rel-14	36.306	NB_IOT-Core	1486		A
R2-1707865	Correction on UE states for MBMS reception	Qualcomm Incorporated	Rel-14	36.300	NB_IOTenh-Core	1042		F
R2-1708311	Clarification that DL only bands are not supported in NB-IoT	Huawei, HiSilicon	Rel-13	36.331	NB_IOT-Core	2988		F
R2-1708312	Clarification that DL only bands are not supported in NB-IoT	Huawei, HiSilicon	Rel-14	36.331	NB_IOT-Core	2989		A
R2-1708317	Miscellaneous corrections for NB-IoTenh and feMTC	Huawei, HiSilicon	Rel-14	36.321	LTE_feMTC-Core, NB_IOTenh-Core	1143		F
R2-1708357	Clean Up of the TR 36.754	CATT	Rel-15	36.754	FS_LTE_UDC	0001		F
R2-1708389	Corrections on eVoLTE	Huawei, HiSilicon	Rel-14	36.331	LTE_VoLTE_ViLTE_enh-Core	2995		F
R2-1708859	Correction on SR prohibit	Huawei, HiSilicon, Nokia Shanghai Bell	Rel-12	36.321	TEI12	1153		F
R2-1708872	Correction on SR prohibit	Huawei, HiSilicon, Nokia Shanghai Bell	Rel-13	36.321	TEI12	1154		A
R2-1708889	Correction on SR prohibit	Huawei, HiSilicon, Nokia Shanghai Bell	Rel-14	36.321	TEI12	1155		A
R2-1708890	Correction on eLAA	Huawei, HiSilicon	Rel-14	36.321	LTE_eLAA-Core	1156		F
R2-1709010	Correction in PUSCH Config description	Qualcomm Korea	Rel-13	36.331	LTE_CA_enh_b5C-Core, LTE_SC_enh_dualC-Core	3016		F
R2-1709015	Correction in PUSCH Config description	Qualcomm Korea	Rel-12	36.331	LTE_SC_enh_dualC-Core	3017		F
R2-1709021	Correction in PUSCH Config description	Qualcomm Korea	Rel-14	36.331	LTE_CA_enh_b5C-Core, LTE_SC_enh_dualC-Core	3018		A
R2-1709180	Cat-M1 indication by Cat-M2 UE	Nokia, Nokia Shanghai Bell	Rel-14	36.306	LTE_feMTC-Core	1499		F
R2-1709181	Cat-M1 indication by Cat-M2 UE	Nokia, Nokia Shanghai Bell	Rel-14	36.331	LTE_feMTC-Core	3022		F
R2-1709184	Miscellanous ASN.1 corrections	Nokia, Nokia Shanghai Bell	Rel-14	36.331	LTE_feMTC-Core	3023		F
R2-1709195	Clarification on systemInformationBlockType2Dedicated	Intel Corporation	Rel-14	36.331	LTE_feMTC-Core	3028		F
R2-1709198	Adding reference to SystemInformationBlockType1-BR to the section on cell status and cell reservations	Intel Corporation	Rel-13	36.304	LTE_MTCe2_L1-Core	0385		F
R2-1709224	Correction for connEstFailOffset	Nokia	Rel-14	36.331	NB_IOTenh-Core	3036		F
R2-1709288	Clarification to GNSS-TimeModelList	Qualcomm Incorporated	Rel-14	36.355	TEI14	0184		F
R2-1709346	Clarification on LWIP aggregation	HTC Corporation	Rel-14	36.331	TEI14	3040		F
R2-1709383	Corrections on logical channel for Rel-13 MTC	Huawei, HiSilicon	Rel-13	36.322	LTE_MTCe2_L1-Core	0128		F
R2-1709389	Corrections on Bandwidth preference indication for Rel-14 MTC	Huawei, HiSilicon	Rel-14	36.331	LTE_feMTC-Core	3047		F
R2-1709391	Corrections on TS 36.306 for Rel-14 MTC	Huawei, HiSilicon	Rel-14	36.306	LTE_feMTC-Core	1500		F
R2-1709490	Corrections to references	Ericsson	Rel-14	36.321	TEI14	1178		F
R2-1709499	Corrections to RLC for re-establishment for NB-IoT using control plane	Qualcomm Incorporated	Rel-14	36.322	NB_IOTenh-Core	0130		F
R2-1709650	Support of RLC UM for LWA bearer	Qualcomm Incorporated	Rel-14	36.300	LTE_WLAN_aggr-Core	1031	2	C
R2-1709651	UE Capabilty for support of RLC UM for LWA bearer	Qualcomm Incorporated	Rel-14	36.306	LTE_WLAN_aggr-Core	1502		C
R2-1709701	Correction on eCA with Dual Connectivity	ROHDE & SCHWARZ	Rel-13	36.331	LTE_CA_enh_b5C-Core	3056		F
R2-1709702	Correction on eCA with Dual Connectivity	ROHDE & SCHWARZ	Rel-14	36.331	LTE_CA_enh_b5C-Core	3057		A
R2-1709704	Cleanup for NB-IoT Enhancements	Huawei, HiSilicon	Rel-14	36.331	NB_IOTenh-Core	2990	1	F
R2-1709710	Clarification on the freqHoppingParametersDL during handover	Intel Corporation	Rel-13	36.331	LTE_MTCe2_L1-Core	3024	1	F
R2-1709711	Clarification on the freqHoppingParametersDL during	Intel Corporation	Rel-14	36.331	LTE_MTCe2_L1-Core	3025	1	A

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	handover							
R2-1709712	Clarification on rsrp-ThresholdsPrachInfoList during handover	Intel Corporation	Rel-13	36.331	LTE_MTCe2_L1-Core	3026	1	F
R2-1709713	Clarification on rsrp-ThresholdsPrachInfoList during handover	Intel Corporation	Rel-14	36.331	LTE_MTCe2_L1-Core	3027	1	A
R2-1709714	Clarification on number of RACH CE levels vs number of RSRP thresholds	Intel Corporation	Rel-13	36.331	LTE_MTCe2_L1-Core	3062		F
R2-1709716	Clarification on UE behaviour for Contention Resolution with Padding	Qualcomm Incorporated	Rel-14	36.321	LTE_feMTC-Core	1164	1	F
R2-1709717	Corrections on TS 36.321 for Rel-13 MTC	Huawei, HiSilicon	Rel-13	36.321	LTE_MTCe2_L1-Core, NB_IOT-Core	1175	1	F
R2-1709718	Corrections on TS 36.321 for Rel-13 MTC	Huawei, HiSilicon	Rel-14	36.321	LTE_MTCe2_L1-Core, NB_IOT-Core	1176	1	A
R2-1709719	Corrections on TS 36.331 for Rel-13 MTC	Huawei, HiSilicon	Rel-13	36.331	LTE_MTCe2_L1-Core	3043	1	F
R2-1709720	Corrections on TS 36.331 for Rel-13 MTC	Huawei, HiSilicon	Rel-14	36.331	LTE_MTCe2_L1-Core	3044	1	A
R2-1709721	Minor corrections on TS 36.355 for Rel-14 MTC	Huawei, HiSilicon	Rel-14	36.355	LTE_feMTC-Core	0185	1	F
R2-1709727	Corrections on TS 36.331 for Rel-14 MTC	Huawei, HiSilicon	Rel-14	36.331	LTE_feMTC-Core	3048	1	F
R2-1709732	Clarification on SI repetition pattern	NTT DOCOMO INC.	Rel-13	36.331	LTE_MTCe2_L1-Core, NB_IOT-Core	2991	2	F
R2-1709738	Correction of MBMS-dedicated cell definition	Qualcomm Incorporated	Rel-14	36.300	MBMS_LTE_enh2-Core	1057	1	F
R2-1709739	RAN-recommended bit rate restriction	Nokia, Nokia Shanghai Bell	Rel-14	36.300	LTE_VoLTE_ViLTE_enh-Core	1053	1	F
R2-1709741	Correction of field descriptions for recommendedBitRate and recommendedBitRateQuery	Ericsson	Rel-14	36.331	LTE_VoLTE_ViLTE_enh	3008	1	F
R2-1709748	Clarification on SCell status during PUCCH SCell change/removal	Intel Corporation	Rel-13	36.300	LTE_CA_enh_b5C-Core	1060		F
R2-1709749	Clarification on SCell status during PUCCH SCell change/removal	Intel Corporation	Rel-14	36.300	LTE_CA_enh_b5C-Core	1061		A
R2-1709750	Clarification on PUCCH SCell change	Intel Corporation	Rel-13	36.331	LTE_CA_enh_b5C-Core	3069		F
R2-1709751	Clarification on PUCCH SCell change	Intel Corporation	Rel-14	36.331	LTE_CA_enh_b5C-Core	3070		A
R2-1709757	Adding reference to SystemInformationBlockType1-BR to the section on cell status and cell reservations	Intel Corporation	Rel-14	36.304	LTE_MTCe2_L1-Core	0386	1	A
R2-1709758	Corrections on logical channel for Rel-13 MTC	Huawei, HiSilicon	Rel-14	36.322	LTE_MTCe2_L1-Core	0129	1	A
R2-1709759	Clarification on number of RACH CE levels vs number of RSRP thresholds	Intel Corporation	Rel-14	36.331	LTE_MTCe2_L1-Core	3063	1	A
R2-1709760	Correction on definition of PRS Occasion Group	ZTE Wistron Telecom AB	Rel-14	36.355	LTE_feMTC-Core	0182	2	F
R2-1709761	Correction of RACH-less handover	Kyocera, Samsung	Rel-14	36.300	LTE_eMob-Core	1032	4	F
R2-1709762	Update of Description and Evaluation Results for Deflate	CATT	Rel-15	36.754	FS_LTE_UDC	0002	2	F
R2-1709766	Clarification on NCSG UE capability	Intel Corporation, NTT DOCOMO	Rel-14	36.331	LTE_meas_gap_enh-Core	3051	1	F
R2-1709769	Clarification on per CC measurement gap	HTC Corporation	Rel-14	36.331	LTE_meas_gap_enh-Core	3054	1	F
R2-1709770	Miscellaneous correction to V2X in TS 36.331	Huawei, HiSilicon	Rel-14	36.331	LTE_V2X-Core	2977	1	F
R2-1709772	Correction on TTI bundling for TDD configurations 2 and 3	NEC	Rel-14	36.331	LTE_UL_CAP_enh-Core	2983	1	F
R2-1709773	Correction on UE category combination in 36.306	Huawei, HiSilicon	Rel-14	36.306	LTE_UL_CAP_enh-Core	1494	1	F
R2-1709774	Corrections to UL 256 QAM capability field descriptions	Ericsson	Rel-14	36.331	LTE_UL_CAP_enh-Core	3052	1	F
R2-1709791	CR on conditon for RRC connection establishment and condition for sidelink UE information for V2X sidelink communication	Huawei, HiSilicon	Rel-14	36.331	LTE_V2X-Core	2993	2	F
R2-1709794	Packet Reordering for Sidelink	Ericsson	Rel-14	36.322	LTE_V2X-Core	0127	2	F
R2-1709795	Packet Reordering for Sidelink	Ericsson	Rel-14	36.331	LTE_V2X-Core	3042	2	F
R2-1709796	Corrections to random selection for P2X related V2X sidelink communication	LG Electronics Inc.	Rel-14	36.321	LTE_V2X-Core	1147	2	F
R2-1709797	Corrections to random selection for	LG Electronics Inc.	Rel-14	36.331	LTE_V2X-Core	2997	2	F

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	P2X related V2X sidelink communication							
R2-1709808	Clarification on Bandwidth Reduced operation	Intel Corporation	Rel-13	36.331	LTE_MTCe2_L1-Core	3029	2	F
R2-1709810	Clarification of the PTAG value for the RACH-less handover	Samsung	Rel-14	36.331	LTE_eMob-Core	3059		F
R2-1709811	Support of RLC UM for LWA bearer	Qualcomm Incorporated	Rel-14	36.323	LTE_WLAN_aggr-Core	0200	3	C
R2-1709812	Introduction of RLC UM support for LWA	Qualcomm Incorporated	Rel-14	36.331	LTE_WLAN_aggr-Core	3055	1	C
R2-1709819	Clarification on NCSG UE capability	Intel Corporation, NTT DOCOMO	Rel-14	36.306	LTE_meas_gap_enh-Core	1501	2	F
R2-1709820	Correction on SPS assistance information in TS 36.331	OPPO	Rel-14	36.331	LTE_SL_V2V-Core	2961	2	F
R2-1709821	Adding abstract syntax notation one description of sidelink pre-configuration	CATT	Rel-14	36.331	LTE_V2X-Core, LTE_D2D_Prox-Core, LTE_eD2D_Prox-Core	2980	3	A
R2-1709822	Adding abstract syntax notation one description of sidelink pre-configuration	CATT	Rel-12	36.331	LTE_D2D_Prox-Core	3060	2	F
R2-1709823	Adding abstract syntax notation one description of sidelink pre-configuration	CATT	Rel-13	36.331	LTE_D2D_Prox-Core, LTE_eD2D_Prox-Core	3061	2	A
R2-1709824	Clarification on Bandwidth Reduced operation	Intel Corporation	Rel-14	36.331	LTE_MTCe2_L1-Core	3030	2	A
R2-1709846	Additional OTDOA Capabilities	Qualcomm Incorporated	Rel-14	36.355	LTE_UE_cat_1RX-Core	0183	1	F
R2-1709856	additionalSpectrumEmission extension	Nokia, Nokia Shanghai Bell, Samsung, Huawei, T-Mobile USA	Rel-10	36.331	TEI10	2998	2	F
R2-1709857	additionalSpectrumEmission extension	Nokia, Nokia Shanghai Bell, Samsung, Huawei, T-Mobile USA	Rel-11	36.331	TEI10	2999	2	A
R2-1709858	additionalSpectrumEmission extension	Nokia, Nokia Shanghai Bell, Samsung, Huawei, T-Mobile USA	Rel-12	36.331	TEI10	3000	2	A
R2-1709859	additionalSpectrumEmission extension	Nokia, Nokia Shanghai Bell, Samsung, Huawei, T-Mobile USA	Rel-13	36.331	TEI10	3001	2	A
R2-1709860	additionalSpectrumEmission extension	Nokia, Nokia Shanghai Bell, Samsung, Huawei, T-Mobile USA	Rel-14	36.331	TEI10	3002	2	A
R2-1709877	Clarification on TAT restart without valid TA value	MediaTek Inc.	Rel-12	36.321	LTE_SC_enh_dualC-Core	1140	1	F
R2-1709897	Clarification to PUCCH-ConfigDedicated	Nokia, Nokia Shanghai Bell	Rel-13	36.331	LTE_CA_enh_b5C-Core	2806	4	F
R2-1709898	Clarification to PUCCH-ConfigDedicated	Nokia, Nokia Shanghai Bell	Rel-14	36.331	LTE_CA_enh_b5C-Core	2807	4	A
R2-1709900	RAR reception for NB-IoT	Nokia, Nokia Shanghai Bell	Rel-14	36.321	NB_IOT-Core	1160	1	A
R2-1709903	RRC Connection Re-establishment for Control Plane CIoT EPS Optimization	MediaTek Inc.	Rel-14	36.331	NB_IOTenh-Core	2985	2	F
R2-1709904	Clarification to positioning measurement in idle state	Ericsson	Rel-14	36.305	NB_IOTenh-Core	0070	2	F
R2-1709905	Correction to contention free random access	Huawei, HiSilicon	Rel-14	36.331	NB_IOTenh-Core	3064	1	F
R2-1709906	Correction to contention free random access	Huawei, HiSilicon	Rel-14	36.321	NB_IOTenh-Core	1181	1	F
R2-1709919	Clarification on MBMS reception with 256QAM	Intel Corporation	Rel-12	36.306	LTE_SC_enh_L1-Core	1496	2	F
R2-1709920	Clarification on MBMS reception with 256QAM	Intel Corporation	Rel-13	36.306	LTE_SC_enh_L1-Core	1497	2	A
R2-1709921	Clarification and simulation results for APDC	CATT	Rel-15	36.754	FS_LTE_UDC	0007		F
R2-1709922	RRM Measurement Clarification on Discovery Signals for LAA	Qualcomm Korea	Rel-14	36.331	LTE_LAA-Core	3014	2	A
R2-1709923	Clarification on MBMS reception with 256QAM	Intel Corporation	Rel-14	36.306	LTE_SC_enh_L1-Core	1498	2	A
R2-1709924	RRM Measurement Clarification on Discovery Signals for LAA	Qualcomm Korea	Rel-13	36.331	LTE_LAA-Core	3013	2	F
R2-1709932	Clarification on TAT restart without	MediaTek Inc.	Rel-13	36.321	LTE_CA_enh-Core,	1183	1	A

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	valid TA value				TEI12			
R2-1709933	Clarification on TAT restart without valid TA value	MediaTek Inc.	Rel-14	36.321	LTE_CA_enh-Core, TEI12	1184	1	A
R2-1709938	Remove the description of Inter RAT Redirection value for MMTEL	Ericsson	Rel-14	36.300	LTE_VoLTE_ViLTE_enh-Core	1059		F
R2-1709940	Introduction of interference randomization in NB-IoT	Qualcomm Incorporated	Rel-14	36.306	NB_IOTenh-Core	1507	1	F
R2-1709941	Introduction of interference randomization in NB-IoT	Qualcomm Incorporated	Rel-14	36.331	NB_IOTenh-Core	3068	1	F
R2-1709947	Correction to eLAA configuration	HTC Corporation	Rel-14	36.331	LTE_eLAA-Core	3041	1	F
R2-1709952	Corrections on the use of plmn-IdentityList in field descriptions	Qualcomm Incorporated	Rel-14	36.331	TEI14	2984	2	F
R2-1709956	Introduction of new NS values for V2X sidelink communication	Huawei, HiSilicon	Rel-14	36.331	LTE_V2X-Core	2978	2	B
R2-1709962	Correction on RACH-less SeNB Change	Huawei, HiSilicon	Rel-14	36.331	LTE_eMob-Core	2994	2	F
R2-1709963	Correction on TAT in RACH-less handover	Huawei, HiSilicon	Rel-14	36.321	LTE_eMob-Core	1144	2	F
R2-1709970	Clarification on SI repetition pattern	NTT DOCOMO INC.	Rel-14	36.331	LTE_MTCe2_L1-Core, NB_IOT-Core	2992	2	A
R2-1709985	TM9 capabilities in CE mode	Qualcomm Incorporated	Rel-13	36.331	LTE_MTCe2_L1-Core	3066	2	F
R2-1709986	TM9 capabilities in CE mode	Qualcomm Incorporated	Rel-14	36.331	LTE_MTCe2_L1-Core	3067	2	A
R2-1709987	TM9 capabilities in CE mode	Qualcomm Incorporated	Rel-13	36.306	LTE_MTCe2_L1-Core	1505	2	F
R2-1709988	TM9 capabilities in CE mode	Qualcomm Incorporated	Rel-14	36.306	LTE_MTCe2_L1-Core	1506	2	A
R2-1709989	Introduction of Release Assistance Indication	Gemalto N.V.	Rel-14	36.300	LTE_feMTC-Core	1058	2	C
R2-1709990	Introduction of Release Assistance Indication	Gemalto N.V.	Rel-14	36.306	LTE_feMTC-Core	1504	2	C
R2-1709991	Introduction of Release Assistance Indication	Gemalto N.V.	Rel-14	36.321	LTE_feMTC-Core	1182	2	C
R2-1709982	Introduction of Release Assistance Indication	Gemalto N.V.	Rel-14	36.331	LTE_feMTC-Core	3065	2	C

119 agreed CRs.

Annex F: Email Approvals

Deadline Monday, 2017-08-28, 23:59 Pacific Time

[99#01][NR] UE capability LS (Ericsson)

Intended outcome: Approved LS to RAN4 in R2-1709979
Deadline: Monday 2017-08-28
=> The LS is approved in R2-1709979.

Deadline Thursday, 2017-08-31, 23:59 Pacific Time

Please request TDoc numbers for the following email discussions from MCC if not already indicated below

[99#02][LTE/feD2D] Update to 36.746 (LG)

To add TP from RAN1
Intended outcome: Agreed TR v2.0.0 for submission to RAN for approval
Deadline: Thursday 2017-08-31
=> The TR is agreed in R2-1709984.

[99#03][LTE/CA] Clarification on PUCCH SCell configuration (Intel)

Intended outcome: Agreed CR
Deadline: Thursday 2017-08-31

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=> The CRs are agreed in R2-1709748, R2-1709749, R2-1709750, R2-1709751,

[99#04][NR] TS 38.300 (Nokia)

Update TS with agreements from this meeting
Intended outcome: Endorsed TS 38.300v1.0.0 for submission to RAN for information
Deadline: Thursday 2017-08-31

=> TS 38.300 is revised in R2-1709937 (v0.7.0).
=> The TS is endorsed in R2-1709937.

[99#05][NR] TS 37.340 (ZTE)

Update TS with agreements from this meeting
Intended outcome: Endorsed TS 37.340v1.0.0 for submission to RAN for information
Deadline: Thursday 2017-08-31

=> TS 37.340 is revised in R2-1709939 (v0.4.0).
=> The TS is endorsed in R2-1709939.

[99#06][LTE/UAV] Align simulation assumption (Qualcomm)

Align assumptions including the RAN1 part.
Intended outcome: Aligned assumptions
Deadline: Thursday 2017-08-31

=> The email discussion report is noted in R2-1709899.

[99#10][NR UP] – Running draft TS 38.321 - Samsung

After endorsing v1.0.0 for submission to RAN, email discussion can continue to address further comments and create an updated version to be endorsed at the next meeting.
Intended outcome: Endorsed TS 38.321v1.0.0 for submission to RAN for information
Deadline: Thursday 2017-08-31

=> The TS is endorsed in R2-1709946.

[99#11][NR UP] – Running draft TS 38.322 - Mediatek

After endorsing v1.0.0 for submission to RAN, email discussion can continue to address further comments and create an updated version to be endorsed at the next meeting.
Intended outcome: Endorsed TS 38.322v1.0.0 for submission to RAN for information
Deadline: Thursday 2017-08-31

=> The TS is endorsed in R2-1709752.

[99#12][NR UP] – Running draft TS 38.323 - LG

After endorsing v1.0.0 for submission to RAN, email discussion can continue to address further comments and create an updated version to be endorsed at the next meeting.
Intended outcome: Endorsed TS 38.323v1.0.0 for submission to RAN for information
Deadline: Thursday 2017-08-31

=> The TS is endorsed in R2-1709753.

[99#13][NR UP] – Running draft TS 37.324 - Huawei

After endorsing v1.0.0 for submission to RAN, email discussion can continue to address further comments and create an updated version to be endorsed at the next meeting.
Intended outcome: Endorsed TS 37.324v1.0.0 for submission to RAN for information
Deadline: Thursday 2017-08-31

=> The TS is endorsed in R2-1709756.

[99#14][LTE/UDC] CR to 36.754 (CATT)

CR of 36.754 on capturing the simulation results of APDC

- Capture the simulation results from R2-1708296, R2-1708383, R2-1708572, R2-1709041 and R2-1708360 for the buffer size of 8K and 16K.
- Remove in TR 36.754 the statement “The same results are obtained for setups with 8Kbyte and 32Kbyte compression buffer size” in Section 7.2.4.2 and the statement “No compression efficiency variation due to buffer size was observed in UDC solution 4” in Section 7.3, and

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indicate instead that “APDC compression efficiency varies as a function of the compression buffer size”.
- Clarify the buffer size issue of APDC.
  Intended outcome: Agreed CR
  Deadline: Thursday 2017-08-31

=> The resulting CR is agreed in R2-1709921.

[99#15][MTC] UE capabilities for tm9 (Qualcomm)

Objective to discuss and agree CRs to 36.331 and 36.306 for Rel-13 and Rel-14, based on R2-1709887, R2-1709888, R2-1709889, R2-1709890
Intended outcome: Agreed CRs
Deadline: Thursday 2017-08-31

=> The CRs are revised in R2-1709942, R2-1709943, R2-1709944 and R2-1709945.
=> The CRs are agreed in R2-1709985, R2-1709986, R2-1709987 and R2-1709988.

[99#16][NB-IoT] Interference Randomisation in NB-IoT (Qualcomm)

Objective to agree CRs (for upcoming RP), and determine whether a Capability is needed or not, based on R2-1709894, R2-1709895.
Intended outcome: Agreed CRs
Deadline: Thursday 2017-08-31

=> The CRs are agreed in R2-1709940 and R2-1709941.

Deadline Thursday, 2017-09-07, 23:59 Pacific Time

Please request TDoc numbers for the following email discussions from MCC if not already indicated below

[99#17][NR] LS in RLM/RLF (Samsung)

Intended outcome: Approved LS
Deadline: Thursday 2017-09-07

=> The LS is approved in R2-1709993

Deadline Thursday, 2017-09-07, 23:59 Pacific Time

TDoc numbers for the following email discussions may be requested via 3GU tool

[99#18][NR] Bearer Type Change (Huawei)

Progress the following issues:
Issue 2: allowed bearer type change, including how to handle PDCP version change for DRB, only handover?
Issue 3: based on the answer of issue 1 and 2, to update the detailed L2 handling of bearer type change
Intended outcome: Report to next meeting on L2 behaviour for each bearer type change.
Deadline: Thursday 2017-09-07

Deadline Thursday, 2017-09-21, 23:59 Pacific Time

TDoc numbers for the following email discussions may be requested via 3GU tool

[99#19][LTE/CA] Unnecessary mandatory IE in UE capability signalling (Intel)

Progress the issue to the next meeting
Intended outcome: Report and possible CR to the next meeting
Deadline: Thursday 2017-09-21

[99#20][LTE/TEI14] Overheating (Huawei)

Petitioners' Exhibit 1012
Nokia of America Corp., et al. v. KT Corporation, et al.
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Discuss the additional information provided in the request and progress CRs for next meeting.
Intended outcome: Report and CRs submitted to next meeting.
Deadline: Thursday 2017-09-21

[99#21][LTE/TEI14] CQI-ReportConfig (Nokia)

Intended outcome: CR submitted to next meeting
Deadline: Thursday 2017-09-21

[99#22][NR] L1 parameters (Ericsson)

Start to progress how to capture and structure the L1 parameters in RRC
Intended outcome: First TP on the ASN.1 including L1 parameters
Deadline: Thursday 2017-09-21

[99#23][NR] L2 Parameters (Huawei)

Start to progress how to capture and structure the L2 parameters in RRC
Intended outcome: First TP on the ASN.1 including L2 parameters
Deadline: Thursday 2017-09-21

[99#24][NR] Decoupling DL band and UL bands (Intel)

To progress the decoupling of DL and UL bands in capabilities.
Intended outcome: Report to next meeting
Deadline: Thursday 2017-09-21

[99#25][NR] Capability coordination, Part 1 (Intel)

Part 1: MR-DC band capability signalling aspects
Stage 3 aspects for band combination structure for MR-DC
Separate container for MR-DC band combination
Identify Other UE capabilities for MR-DC
Intended outcome: Stage 3 TP
Deadline: Thursday 2017-09-21

[99#26][NR] Capability coordination, Part 2 (DOCOMO)

Part 2: Details of baseband capability structure for NR and LTE
Starting point is Example 1 and Example 2 as captured in RAN4 LS (R2-1709945)
Discuss whether the baseband capability structure is also applied for LTE standalone
Intended outcome: Design details of baseband capability structure
Deadline: Thursday 2017-09-21

[99#27][NR] Capability coordination, Part 3 (Nokia)

Part 3: MR-DC capability coordination aspects
Phase 1: How to coordinate MR-DC band combination
Phase 2: Coordination of MR-DC baseband capability and joint MR-DC band combination and baseband capability
Intended outcome: Email discussion report
Deadline: Thursday 2017-09-21

[99#28][NR] Beam selection for HO access (Intel)

Progress on beam selection for HO access including developing a TP for stage 2 and stage 3.
Intended outcome: Report and TPs for next meeting
Deadline: Thursday 2017-09-21

[99#29][NR] Connection Control (Intel)

Petitioners' Exhibit 1012
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To progress proposals 18, 19, 20 (Reject on SRB1 or SRB0 and the target state) from R2-1708799.
Intended outcome: Report to next meeting
Deadline: Thursday 2017-09-21

[99#30][NR] RRC Connection Reconfiguration (Ericsson)

- To discuss the following open issues and also draft stage 3 ASN.1 and procedures, including the LTE part:

Security configuration and parameters
If all bullets apply to SRBs
Bearer change between LTE and NR PDCP
Next steps
Update text proposal and share with others
Check L2 actions
Focus should be on the high level structure and only if time allows the discussion could discuss other unrelated parts of the configuration.
Intended outcome: Report and TP to next meeting
Deadline: Thursday 2017-09-21

[99#31][NR] Additional information for SSB and CSI-RS config (Ericsson)

- To conclude on the additional information (periodicity, time offset, window) for both SSB and CSI-RS based on received parameters from RAN1

Intended outcome: Report to next meeting
Deadline: Thursday 2017-09-21

[99#32][NR] TP on RRM (Ericsson)

To capture progress from this meeting.
The discussion can also resolve small FFS points (e.g. items taken from the LTE baseline that do not directly translate into NR without some discussion, and items (e.g. features added in later releases of LTE) from the LTE baseline for which there has not yet been an explicit decision whether to include them in NR).
Email discussion summary should provide a summary of any small decisions that were taken as well as provide a list of the remaining FFS points.
Intended outcome: TP submitted to next meeting
Deadline: Thursday 21/09/2017

[99#33][LTE/eViLTE] UE assistance information (CMCC)

Progress on details of UE assistance method.
2 phase discussion to progress solution and then prepare CRs
Intended outcome: Report to next meeting and draft CRs to RAN2#100
Deadline: Thursday 2017-09-21

[99#34][LTE/sTTI] – SPS for sTTI

- review and provide comments on running CR for SPS

Intended outcome: Report to next meeting
Deadline: Thursday 2017-09-21

[99#35][NR UP] Reassembly for RLC UM - Qualcomm

Intended outcome: Agreeable text proposal
Deadline: Thursday 2017-09-21

[99#36][NR UP] Out-of-order delivery in PDCP – LG

Intended outcome: Agreeable text proposal
Deadline: Thursday 2017-09-21

[99#37][LTE/UAV] DL and UL Interference detection (DOCOMO)

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- Discuss other observations from the contributions in 9.4.3 and capture the agreed observations
- Based on the agreed observations, solutions can be discussed
  Intended outcome: Report to next meeting
  Deadline: 2017-09-21

[99#38][LTE/UAV] Running TR36.777 (DOCOMO)

- Capture the agreements from this meeting
  Intended outcome: Running TR
  Deadline: 2017-09-21

[99#39][LTE/QMC] RAN controlled CP based solution (Huawei)

- Figure out the details of CP solution with a mechanism to control the measurement report by RAN
- The spec impact should be identified for the proposed mechanisms.
  Intended outcome: Report to next meeting
  Deadline: 2017-09-21

[99#40][MTC] UE in CE (Intel)

Objective to clarify UE in CE and the Tentative Issue that a UE in CE may bar a cell also for non-CE/BR operation.
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#41][NB-IoT/MTC] Measurement relaxation (Ericsson)

Objective to discuss the a) mechanisms to detect whether measurement relaxation applies or not, focusing on the mechanisms on the table (counting cells/detect cell change, RSRP measurement serving cell) including stage-3 details, and b) discuss in more detail how this is configured (per UE, per cell etc).
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#42][NB-IoT] SPS options (Huawei)

Objective to become better familiar with pros/cons, etc, to be able to make decisions at next meeting. Discuss Use case, Benefits, Impacts, Implications.
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#43][NB-IoT] RRC Connection release (Mediatek),

Objective to iron out the character of the proposals on the table, to be able to take well informed decisions at next meeting
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#44][NB-IoT] UE differentiation (Huawei)

Focus on what information is beneficial for the eNB w.r.t. Uu operation, can also discuss how the information becomes available in the network, e.g. for non-static information, if any.
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#45][NB-IoT/MTC] Early data transmission (Qualcomm)

Detailed aspects of early data transmission
To address the following but not limited to:
RRC signalling, e.g. whether there is any RRC signalling, at which point control information is sent and how. Security aspects, indication of UE's intention of early data, contents of Msg2, Msg3, Msg4, Msg5, how to identify a UE etc.

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Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#46][MTC] Skipping SIB1-BR (Sierra Wireless)

Identifying the use cases for skipping SIB1-BR
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#47][LTE/Positioning] RTK assistance data encoding (Huawei)

To finalise the pros/cons of the two options and try to reach a consensus for one, considering the longer term concerns as well as Rel-15. Start from the table in R2-1708518.
Deadline: for next meeting
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#48][eV2X] Selection of Tx carriers (Huawei)

Focus on mode 4

- Factors/options to be taken into account as criteria of Tx carrier selection (including pros and cons, not precluding Rx consideration)
- Inter-layers interactions between AS and upper layers (what information would be provided by upper layer)

Check companies' views/preferences.
Intended outcome: Report to next meeting
Deadline: 2017-09-21

[99#07][LTE/sTTI] – Running CR 36.300 – Ericsson

Intended outcome: Endorse running CR
Deadline: Thursday 2017-09-21

[99#08][LTE/sTTI] – Running CR 36.331 – Ericsson

Intended outcome: Endorse running CR
Deadline: Thursday 2017-09-21

[99#09][LTE/sTTI] – Running CR 36.321 Ericsson

Intended outcome: Endorse running CR
Deadline: Thursday 2017-09-21

[99#49][NR] MN/SN procedures (ZTE)

To progress further details regarding MN/SN procedures as described in R2-1709953
Intended outcome: Report to next meeting
Deadline: 2017-09-21

Annex G: History

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Document history		
Date	**TSG RAN WG2 Tdoc**	**Subject**
31.08.2017	-	Draft report v1
10.09.2017	-	Draft Report v2
06.10.2017	-	Draft Report v3
08.08.2017	R2-1710001	Version submitted for approval in RAN2#99bis

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APPENDIX 33

SA WG2 Meeting #117 **REPORT**

17 - 21 October 2016, Kaohsiung City, Taiwan

Source: **Secretary of SA WG2**

Title: **Report of SA WG2 meetings #117**

Status: **Version 1.0.0 - Approved at SA WG2 meeting #118**

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1 Opening of the meeting

The SA WG2 Chairman, **Mr. Frank Mademann** (Huawei Technologies Co. Ltd.) opened the meeting which was hosted by TAICS and ITRI. **Mr. Shubhranshu Singh** (ITRI) welcomed delegates to Kaohsiung City, Taiwan and provided information about the area and the domestic arrangements for the meeting (see TD S2-165883) and wished SA WG2 a productive meeting. A reception banquet was arranged for Wednesday evening, delegates were asked to register for attendance for this. Vice Chairmen were **Mr. Krisztian Kiss (Apple)** and **Mr. Puneet Jain (Intel)**. The Secretary was **Mr. Maurice Pope (MCC)**.

TD S2-165883 (OTHER) Welcome to Kaohsiung. (Source: TAICS, Mediatek, Chunghwa Telecom, ITRI).
Abstract: TAICS (Taiwan Association of Information and Communication Standards), Mediatek, Chunghwa Telecom and ITRI have the pleasure of welcoming you to SA WG2#117, Monday 17 to Friday 21 October 2016 in Kaohsiung.

Discussion and conclusion:

This was presented by **Mr. Shubhranshu Singh** (ITRI) who was thanked for this information. This was then noted.

2 Approval of the agenda

TD S2-165473 (AGENDA) Draft Agenda for SA WG2#117. (Source: SA WG2 Chairman).
Abstract: The meeting agenda.

Discussion and conclusion:

Updates made to the schedule were provided in the 'drafts' folder and was reviewed. A number of proposals for schedule changes were raised and the schedule was modified to try to avoid clashes for delegates where possible. The schedule will be modified if necessary to allow additional drafting sessions where clashes cannot be resolved. The agenda was approved and the schedule will be updated on the local 'drafts' folder throughout the meeting.

2.1 IPR Call and Antitrust Reminder

IPR Call Reminder:

The Chairman of the meeting made the following call for IPRs, and asked ETSI members to check the latest version of ETSI's policy available on the web server:

> 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 are thereby invited:
>
> - to investigate whether their organization or any other organization owns IPRs which were, or are 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/).

Antitrust declaration:

The Chairman of the meeting made the following Antitrust declaration:

> The attention of the delegates to the meeting was drawn to the fact that 3GPP activities were subject to 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 present meeting would be conducted with strict 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.

3 Meeting reports

TD S2-165474 (REPORT) Draft Report of SA WG2 meeting #116BIS. (Source: SA WG2 Secretary).
Abstract: Draft Report version 0.1.1rm of meeting #116BIS for approval.

Discussion and conclusion:

The report was reviewed and approved. Revision marks will be accepted and the report saved on the FTP server as version 1.0.0.

4 General

4.1 Common issues and Incoming LSs

TD S2-165484 LS from TSG SA: Completion of SA WG3-LI Study TR 33.827 on S8HR. (TSG SA)
Abstract: At SA WG3-LI#62BIS, SA WG3-LI completed work on the S8HR LI feasibility study in TR 33.827. At SA#73, SA have approved the TR for publication in R14. SA kindly asks GSMA, to review the TR (attached as v1.0.0 in SP-160606.zip), and consider how to address the issues within GSMA scope identified in the evaluation and conclusion sections.
The study broadly concludes that it is possible to meet LI requirements for S8HR in the VPLMN subject to normative implementation of solutions in TR 33.827 in TS 33.107 and TS 33.108. However, the study concludes that GSMA will need to make specific provision for LI and separately Retained Data (RD), in roaming agreements relating to use of confidentiality disabling at the IMS level and enabling over S8.
Furthermore based on current R14 SA WG2 and CT specifications, the S8HR LI solutions in TR 33.827 either require VPLMN deployment restrictions to prevent S-GW relocation or enhancements to SA WG2 / CT specifications.
In addition, since the P-CSCF is not explicitly aware of which S8HR connections are allowed or not allowed to use confidentiality protection, then the P-CSCF must disable confidentially protection for all served users. Therefore it would be necessary to use a dedicated P-CSCF in the HPLMN for S8HR or SA WG2 / CT Groups would need to enhance IMS specifications.
For R14 it is proposed that SA WG2 and CT specifications will be modified to include appropriate notes placing deployment restrictions on S-GW and P-CSCF selection in relation to S8HR LI scenarios.
For R15, 3GPP may consider enhancements if that is deemed necessary.

Discussion and conclusion:

Responses drafted in TD S2-165850 on IMS aspect under AI 6.4 and TD S2-165882 on SGW aspect under AI 6.1. Ericsson commented that the response needs to be consistent for the IMS and SGW aspects. It was clarified that the aspects will be handled separately with the aim to merge the responses into a single LS reply. Final response in TD S2-166231.

5 Pre-Rel-14 Essential Corrections

5.1 3GPP Packet Access Maintenance excluding CIOT maintenance

5.1.1 3GPP Packet Access Maintenance on Architecture enhancements for Cellular Internet of Things (CIOT)

This agenda item was convened by Puneet Jain (Intel).

LSs

TD S2-165478 LS from ETSI TC LI: LI in the CIoT. (ETSI TC LI)
Abstract: ETSI TC-LI thanks SA WG3LI for taking care of LI in the 3GPP. It is TC-LI's understanding that a group in 3GPP has recently produced narrowband CIoT documents that do not take LI into account as a standard feature. TC-LI advises 3GPP that, although current LI legislation is often focussed on the interception of communication of a person, communication of a device is frequently also the subject of interception. This can apply to a device that is not intended to handle communication of a person. Under IUR95, there continues to be a standing obligation to provide LI capability for telecommunications services. TC-LI kindly asks SA WG3LI if TC-LI's understanding is correct, that recent narrowband CIoT documents do not support LI. If so TC-LI requests SA WG3LI to inform the appropriate groups in 3GPP that LI and RD may also apply to the CIoT and requests SA WG3LI to raise the awareness of these requirements.

Parallel comment: SA WG2 expect SA WG3 will take lead on this and if anything needs to be done from SA WG2 side, SA WG3 will come back to SA WG2.

Discussion and conclusion:

Noted in parallel session.

TD S2-165481 LS from SA WG5: Reply LS to SA WG2, CT WG4 Response LSs on Control Plane CIoT Optimisation Indicator propagated to PGW for charging purpose. (SA WG5)
Abstract: SA WG5 thanks SA WG2 and CT WG4 for their response LSs on the Control Plane CIoT EPS Optimisation Indicator propagated to PGW for charging purpose.
Based on SA WG2 confirmation on SGW capability to differentiate between data sent over S11-U and data sent over S1-U, SA WG5 will keep the already specified separate data volume recording by the SGW.
SA WG5 understands that SA WG2 sees no strong need for the PGW to also be aware of which bearer (S11-U or S1-U) is used for the data transfer, since this is expected to be solely under VPLMN control (i.e. SGW level), therefore no mean has been specified to this intent. Consequently, SA WG5 has re-evaluated the requirement for the PGW to record data volume differentiated between the bearers used by the SGW during data transfer, by considering inter-PLMN charging aspects. SA WG5 came to the same conclusion, i.e. since the bearer selection is fully under VPLMN control, this cannot be a criterion for inter-PLMN charging settlements.
SA WG5 has also considered during this re-evaluation, the analysis from CT WG4 on the associated signalling load, whereby CT WG4 confirms, as anticipated by SA WG2, it would be increasing by such reporting to the PGW. SA WG5 confirms this reporting can be avoided, since it is no more required.
Action: SA WG5 kindly asks SA WG2 and CT WG4 to take the above responses into account.

Discussion and conclusion:

Noted in parallel session.

TD S2-165482 LS from ITU-T JCA-IoT SC&C: LS on recent work by JCA-IoT and SC&C. (ITU-T JCA-IoT SC&C)
Abstract: The last meeting of the Joint Coordination Activity on Internet of Things and Smart Cities and Communities (JCA-IoT and SC&C) took place in Geneva on the 29 July 2016 during the meeting of its parent group ITU-T Study Group 20 (Geneva, 25 July-5 August 2016).
The input documents for this meeting can be found here. The report of this meeting can be found as output document 48R1. The meeting decided to update the IoT and SC&C standards roadmap - the latest version of which is available as a free download on the webpage of the JCA-IoT SC&C. We would be grateful if you would send us information on ongoing activities carried out by your organization in the area of IoT and smart cities in order to update the above-mentioned roadmap. The current list of contacts is available as JCA-IoTSC&C input 2 Rev.22.
Please keep us informed of any changes to this list.

Parallel comment: SA WG2 expect TSG SA will provide response based on the existing work plan.

Discussion and conclusion:

Noted in parallel session.

CIoT optimizations related

TD S2-165670 23.401 CR3136 (Rel-13, 'F'): Clarifying the UE behaviour for switch to UP. (Source: Qualcomm Incorporated).
Abstract: Summary of change: Clarifies the process by which the UE can select to trigger 'establishment of S1-U bearer during Data Transport in Control Plane CIoT EPS optimisation'.

Discussion and conclusion:

Noted in parallel session.

TD S2-165671 23.401 CR3137 (Rel-14, 'A'): Clarifying the UE behaviour for switch to UP. (Source: Qualcomm Incorporated).
Abstract: Rel-14 mirror CR: Summary of change: Clarifies the process by which the UE can select to trigger 'establishment of S1-U bearer during Data Transport in Control Plane CIoT EPS optimisation'.

Discussion and conclusion:

Revised in parallel session to TD S2-166003. Agreed in parallel session. This was block approved.

TD S2-165674 23.401 CR3138 (Rel-13, 'F'): Correction of handling of resume cause. (Source: Intel).
Abstract: Summary of change: The eNodeB notifies the MME of the RRC resume cause independent of the specific cause value or a specific RAT.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165675 23.401 CR3139 (Rel-14, 'A'): Correction of handling of resume cause. (Source: Intel).
Abstract: Rel-14 mirror CR: Summary of change: The eNodeB notifies the MME of the RRC resume cause independent of the specific cause value or a specific RAT.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165736 23.401 CR3140 (Rel-13, 'F'): APN Rate Control and emergency bearer service. (Source: HTC).
Abstract: Summary of change: /********** Change 1 **********/ Specify that the visited PLMN sends APN rate control parameter for emergency PDN connection as per the local policy of the visited PLMN. /********** Change 2 **********/ Specify that the UE shall ignore the APN rate control parameter received in last PLMN if it selects a new PLMN.

Discussion and conclusion:

Revised in parallel session to TD S2-166004. Revised in parallel session to TD S2-166194. Agreed in parallel session. This was block approved.

TD S2-165737 23.401 CR3141 (Rel-14, 'A'): APN rate control and emergency bearer service. (Source: HTC).
Abstract: Rel-14 mirror CR: Summary of change: /********** Change 1 **********/ Specify that the visited PLMN sends APN rate control parameter for emergency PDN connection as per the local policy of the visited PLMN. /********** Change 2 **********/ Specify that the UE shall ignore the APN rate control parameter received in last PLMN if it selects a new PLMN.

Discussion and conclusion:

Revised in parallel session , merging TD S2-165738, to TD S2-166005. Agreed in parallel session. This was block approved.

TD S2-165738 23.401 CR3142 (Rel-14, 'F'): Clarification to the APN rate control procedure. (Source: HTC).
Abstract: Summary of change: Specify that the UE will consider received rate control instructions as valid until the last PDN connection using this APN is released.

Discussion and conclusion:

Merged with TD S2-165737 into TD S2-166005.

TD S2-165857 23.401 CR3144 (Rel-14, 'F'): Missing indirect forwarding tunnel deletion in TAU with SGW change. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: The missing tunnel deletion is added in the call flow.

Discussion and conclusion:

Revised in parallel session to TD S2-166006. Revised in parallel session to TD S2-166197. Agreed in parallel session. This was block approved.

NIDD procedure related

TD S2-165707 23.682 CR0237 (Rel-14, 'F'): SCEF behaviour when MT NIDD Causes a Trigger. (Source: Convida Wireless, Oracle).
Abstract: Summary of change: Removed the reference to the MME in 5.13.2 Added a sentence to step 2 of 5.13.3 to say that the cause value from the SCEF can indicate if data is buffered or not. Then, updated step 5 to say that if the SCEF is waiting for the UE to establish a connection, it goes to step 7 when the T6a connection is established.

Discussion and conclusion:

Revised in parallel session to TD S2-166007. Agreed in parallel session. This was block approved.

TD S2-165759 23.682 CR0241 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data. (Source: NEC).
Abstract: Summary of change: Following changes are proposed when the SCEF handles multiple non-IP data. 1) In step 2, it is clarified that the quota or rate is applied per SCEF EPS bearer. 2) In step 2, the SCEF buffers additional non-IP data if any other non-IP data are already buffered for this SCEF EPS bearer. 3) In step 7, it is clarified that the SCEF sends non-IP data in the buffered order and under the given quota or rate.

Discussion and conclusion:

Revised in parallel session to TD S2-166008. Revised in parallel session to TD S2-166195. Corrections were made and this was revised in TD S2-166267 which was approved.

TD S2-165760 23.682 CR0242 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data. (Source: NEC).
Abstract: Rel-14 mirror CR: Summary of change: Following changes are proposed when the SCEF handles multiple non-IP data. 1) In step 2, it is clarified that the quota or rate is applied per SCEF EPS bearer. 2) In step 2, the SCEF buffers additional non-IP data if any other non-IP data are already buffered for this SCEF EPS bearer. 3) In step 7, it is clarified that the SCEF sends non-IP data in the buffered order and under the given quota or rate.

Discussion and conclusion:

Revised in parallel session to TD S2-166009. Revised in parallel session to TD S2-166196. Corrections were made and this was revised in TD S2-166268 which was approved.

TD S2-165852 23.682 CR0243 (Rel-13, 'F'): Correction of T6a connection establishment parameters. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: The superfluous APN Rate Control parameter is removed.

Discussion and conclusion:

Noted in parallel session.

TD S2-165855 23.682 CR0244 (Rel-14, 'A'): Correction of T6a connection establishment. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Rel-14 mirror CR: Summary of change: The superfluous APN Rate Control parameter is removed.

Discussion and conclusion:

Noted in parallel session.

5.2 QoS and PCC Maintenance

This agenda item was convened by Shabnam Sultana (Ericsson).

TD S2-165726 23.203 CR1069 (Rel-13, 'F'): Remove 'same media type' requirement for Priority Sharing. (Source: Motorola Solutions, Airwave).
Abstract: Summary of change: Remove requirement for the media flows to be of the same type before they can share a bearer: having the same QCI is sufficient. Additionally, a small English change in the last sentence is made, because without it, the sentence can be reasonably construed to state that the 'resource reservation failed using existing procedures'.

Parallel comment: SA WG2#118 may have additional discussion related to issues not yet addressed in this CR. But this CR stands on its own and will not affect the status of this CR due to unaddressed issues.

Discussion and conclusion:

No need for TEI13 WI Code. Revised in parallel session to TD S2-166088. Agreed in parallel session. This was block approved.

TD S2-165727 23.203 CR1070 (Rel-14, 'A'): Remove 'same media type' requirement for Priority Sharing. (Source: Motorola Solutions, Airwave).
Abstract: Rel-14 mirror CR: Summary of change: Remove requirement for the media flows to be of the same type before they can share a bearer: having the same QCI is suffcient. Additionally, a small English change in the last sentence is made, because without it, the sentence can be reasonably construed to state that the 'resource reservation failed using existing procedures'.

Discussion and conclusion:

Revised in parallel session to TD S2-166089. Agreed in parallel session. This was block approved.

5.3 Non-3GPP Access Maintenance

This agenda item was convened by Krisztian Kiss (Apple).

TD S2-165476 LS from RAN WG2: LS on NBIFOM and steering command. (RAN WG2) (Revision of TD S2-164931).
Abstract: In Rel-13, as part of the RCLWI feature, RAN WG2 defined a steering command which the eNB can send to the UE to trigger the UE to steer traffic between LTE and WLAN. Upon reception of such a steering command, AS sends to NAS a 'move-traffic-to-WLAN' indication or a 'move-traffic-from-WLAN' indication (depending on which direction the eNB indicates that the UE should steer traffic).
These indications are the same indications as are used for the Rel-12 'RAN rules'-based traffic steering which is defined in TS 36.304. RAN WG2 understands that NBIFOM can interwork with the 'RAN rules' defined in TS 36.304, i.e. fulfilment of the rules could trigger the UE to steer traffic based on NBIFOM.
RAN WG2 agreed that, from RAN WG2's point of view, it should be possible that Rel-13 RCLWI steering commands also interwork with NBIFOM.
RAN WG2 agreed the attached CR for TS 36.300 to capture this. RAN WG2 would also like to inform SA WG2 and CT WG1 that the term 'RAN rules' is not used in the RAN WG2 specifications. Instead the terms 'RAN-assisted WLAN interworking' and 'RAN-controlled LTE-WLAN interworking' are used for the features defined in Rel-12 and Rel-13, respectively. RAN WG2 would prefer to align the terminology in the 3GPP specifications to avoid confusion.
RAN WG2 kindly requests SA WG2 and CT WG1 to take the above into consideration and update their specifications accordingly if deemed necessary.
Action: RAN WG2 kindly requests SA WG2 and CT WG1 to take the above into consideration and update their specifications accordingly if deemed necessary.

Discussion and conclusion:

Revision of TD S2-164931. Not Handled. Postponed to meeting #118.

TD S2-165553 23.161 CR0024 (Rel-13, 'F'): NBIFOM with RAN Controlled WLAN Interworking. (Source: Ericsson).
Abstract: Summary of change: Updates the text on 'RAN Rules' to cover also the RCWLI. Clarify terminology to indicate that RAN Rules correspond to the 'RAN-assisted WLAN interworking', similar to how the term is used in 23.402.

Parallel comment: Add clauses affected and Broadcom as source.

Discussion and conclusion:

Revised in parallel session to TD S2-165934. Revised in parallel session to TD S2-166229. Agreed in parallel session. This was block approved.

TD S2-165841 23.161 CR0025 (Rel-13, 'F'): Correction related to RAN rules. (Source: Intel).
Abstract: Summary of change: It is proposed to add a definition of RAN rules, similar to the definition in TS 23.402, that explicitly refers to both RAN-assisted WLAN interworking and RAN-controlled LTE-WLAN interworking. 'RAN-controlled LTE-WLAN interworking' is added in the following three clauses: 6.7.1.0, 6.7.2 and 6.7.3.

Discussion and conclusion:

Noted in parallel session.

TD S2-165493 23.401 CR3130 (Rel-14, 'F'): Corrections for allowing seamless handovers of emergency sessions to WLAN. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: It is specified that when the UE is registered to both 3GPP and WLAN accesses: - The HSS updates the ePDG/TWAN serving the UE as soon as it is notified with the PDN GW for emergency services by the MME. - The HSS stores the PDN GW for emergency services but not the APN.

Discussion and conclusion:

Revised in parallel session to TD S2-165935. Agreed in parallel session. This was block approved.

TD S2-165494 23.402 CR2967 (Rel-14, 'F'): Correction of emergency services continuity between WLAN and 3GPP access. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: It is specified that - For roaming authenticated users, the VPLMN shall use a static PDN GW for emergency sessions. - For non roaming authenticated users, based on operator policy, (e.g. the network supports handovers to/from HRPD), the ePDG/TWAG may be configured with a static PDN GW identity as part of the Emergency Configuration Data. - When the UE is registered to both 3GPP and WLAN accesses, the HSS updates the MME serving the UE as soon as it is notified with the PDN GW for emergency services by the 3GPP AAA server.

Discussion and conclusion:

Revised in parallel session to TD S2-165936. Revised in parallel session to TD S2-166230. This was reviewed and revised to correct the affected clauses in TD S2-166266 which was approved.

5.4 IMS and IMS-Related Maintenance

This agenda item was convened by Krisztian Kiss (Apple).

TD S2-165510 23.228 CR1161 (Rel-13, 'F'): Editorial change reflecting IMS being access agnostic. (Source: Ericsson).
Abstract: Summary of change: Removing PLMN and text related to service specification. 'bearer' replaced.

Parallel comment: Undelete the word 'services'.

Discussion and conclusion:

Revised in parallel session to TD S2-165937. Agreed in parallel session. This was block approved.

TD S2-165511 23.228 CR1162 (Rel-13, 'F'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF. (Source: Ericsson).
Abstract: Summary of change: Updates made in 23.002 and other editorial changes to fonts and removing text 'IMS Subsystem' in figure since figure title should be enough. Also, Mw reference point between P-CSCF and I-CSCF added.

Parallel comment: Reference Point used for IMS media transport IP network services. Change Mb reference point definition to 'Reference Point used for IMS media transport IP network services'.

Discussion and conclusion:

Revised in parallel session to TD S2-165939. Agreed in parallel session. This was block approved.

TD S2-165512 23.228 CR1163 (Rel-14, 'A'): Editorial change reflecting IMS being access agnostic. (Source: Ericsson).
Abstract: Rel-14 mirror CR: Summary of change: Removing PLMN and text related to service specification. 'bearer' replaced.

Parallel comment: Undelete the word 'services'. Change WI code to TEI13.

Discussion and conclusion:

CR WI Code should be TEI13. Revised in parallel session to TD S2-165938. Agreed in parallel session. This was block approved.

TD S2-165513 23.228 CR1164 (Rel-14, 'A'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF. (Source: Ericsson).
Abstract: Rel-14 mirror CR: Summary of change: Updates made in 23.002 and other editorial changes to fonts and removing text 'IMS Subsystem' in figure since figure title should be enough. Also, Mw reference point between P-CSCF and I-CSCF added.

Parallel comment: Change Mb reference point definition to 'Reference Point used for IMS media transport IP network services' Change WI code to TEI13.

Discussion and conclusion:

CR WI Code should be TEI13. Revised in parallel session to TD S2-165940. Agreed in parallel session. This was block approved.

TD S2-165792 23.292 CR0234R1 (Rel-13, 'F'): ICS MSC with I2 and T-ADS handling interaction. (Source: Nokia). (Revision of TD S2-164569).
Abstract: Summary of change: Adding new procedure to allow T-ADS to wait for possible new IMS registration before clearing the call completely.

Discussion and conclusion:

Merged in parallel session with TD S2-165818 into TD S2-165941.

TD S2-165794 23.292 CR0240 (Rel-14, 'A'): ICS MSC with I2 and T-ADS handling interaction. (Source: Nokia).
Abstract: Rel-14 mirror CR: Summary of change: Adding new procedure to allow T-ADS to wait for possible new IMS registration before clearing the call completely.

Discussion and conclusion:

Merged in parallel session with TD S2-165819 into TD S2-165942.

TD S2-165817 (DISCUSSION) Discussion on the MT via I2. (Source: ZTE).
Abstract: This paper analyzes the called mobile simultaneously moving from an old to a new MSC in I2 case, and gives a proposal.

Discussion and conclusion:

Noted in parallel session.

TD S2-165818 23.292 CR0241 (Rel-13, 'F'): Mobile terminating via I2 while the UE moves the a new MSC. (Source: ZTE).
Abstract: Summary of change: During MT, The SCC AS sends the new INVITE to the new eMSC if it receive new IMS registration from new MSC after it sends INVITE to old MSC. If SCC AS receives the IMS de-registration without new IMS registration, it will procedure in 7.4.2.1.3.

Parallel comment: The CR is accepted as a working draft, it will be further enhanced and completed at the next meeting.

Discussion and conclusion:

Revised in parallel session, merging TD S2-165792, to TD S2-165941. Postponed in parallel session.

TD S2-165819 23.292 CR0242 (Rel-14, 'A'): Mobile terminating via I2 while the UE moves the a new MSC. (Source: ZTE).
Abstract: Rel-14 mirror CR: Summary of change: During MT, The SCC AS sends the new INVITE to the new eMSC if it receive new IMS registration from new MSC after it sends INVITE to old MSC. If SCC AS receives the IMS de-registration without new IMS registration, it will procedure in 7.4.2.1.3.

Parallel comment: The CR is accepted as a working draft, it will be further enhanced and completed at the next meeting.

Discussion and conclusion:

Revised in parallel session, merging TD S2-165794, to TD S2-165942. Postponed in parallel session.

5.5 Study on architecture enhancements of cellular systems for ultra low complexity and low throughput Internet of Things (FS_AE_CIoT)

This topic was not on the agenda for this meeting.

6 Release 14

There were no contributions under this agenda item.

6.1 Rel-14 3GPP Packet Access Maintenance - essential corrections

TD S2-165908 LS from RAN WG2: LS on The progress and questions for the light connection. (RAN WG2)
Abstract: The work Item on Signalling reduction to enable light connection for LTE was approved at RAN#71 and the WID is in RP-160540, and it is attached. In RAN WG2 #95 and RAN WG2 #95 bis, RAN WG2 have made the agreements listed in Annex section. The two modelling are defined as follows: Modelling A : Lightly connected UEs are in RRC_CONNECTED with light connection indication and ECM_CONNECTED from UE point of view. Modelling B : Lightly connected UEs are in RRC_IDLE with light connection indication and ECM_IDLE from UE point of view. RAN WG2 agreed that the lightly connected UEs enter into legacy behaviour in RRC connected via RRC procedure including three messages (i.e. request, response and complete).
For Modelling A, the procedure could be RRC resume or reestablishment procedure. For Modelling B, the procedure could be RRC resume. In particular, RAN WG2 discussed on the ECM state and decided that the NAS state is ECM_CONNECTED from the network point of view, given that the S1 connection is kept and active when the UE is in 'light connected' state. About the UE point of view, RAN WG2 has not decided yet on the modelling and therefore would like to ask the following questions.
RAN WG2 intends to decide between Modelling A and Modelling B in the next RAN WG2 meeting.
RAN WG2 would kindly as to CT WG1 to provide their input on the following aspects: As agreed in this meeting 'UE should be configured into lightly connection by dedicated RRC signalling (i.e. RRC reconfiguration or RRC release). From MME point of view, lightly connected UE is in ECM_CONNECTED.'
Q1: RAN WG2 would kindly like to ask CT WG1 to consider potential NAS impacts that ECM state mismatch between the MME and UE could bring (e.g. Periodic tracking area update) if modelling B is used or any other.
As agreed in this meeting, 'For modelling A, if RRC resume procedure is used by lightly connected UEs, eNB should be allowed to trigger the fallback procedure to establish the RRC connection upon RRC connection setup.'
Q2: In R13, if RRC resume procedure is used the eNB should be allowed to trigger the fallback procedure to establish the RRC connection upon RRC connection setup, the RRC layer will indicate the upper layers that the RRC connection resume has been fallbacked.
RAN WG2 would kindly like to ask CT WG1 about the feasibility of fallback to RRC Connection establishment in the case of modelling A.
RAN WG2 would kindly as to RAN WG3 to provide their input on the following aspects: As agreed in this meeting 'For the RAN-initiated paging occasion calculation, the preferred UE ID is 'IMSI mod x' design.'
Q3: RAN WG2 would kindly like to ask RAN WG3 whether there are any concerns to enable the signalling to provide the 'UE IMSI mod X' to the eNB when the UE is in ECM_CONNECTED from MME point of view.

Discussion and conclusion:

LATE DOC: Rx 16/10, 11:30. Not Handled. Postponed to meeting #118.

TD S2-165882 Draft Response LS to 'Completion of SA WG3-LI Study TR 33.827 on S8HR'. (Vodafone)
Abstract: Response to SA WG3 LI on the difficulty of stopping SGW relocation.

Parallel comment: Merge in IMS part reply (TD S2-165850), still FFS whether SGW part will be in the reply.

Discussion and conclusion:

Response to TD S2-165484. Merged in parallel session with TD S2-165850.

TD S2-165480 LS from SA WG4: Reply LS on external interface for TV services. (SA WG4)
Abstract: SA WG4 would like to thank SA WG2 for the LS on external interface for TV services. We are pleased with your progress on TMB2. We have agreed on new work item SA_enTV-MI_MTV (attached) to prepare in collaboration with SA WG2 the detailed Stage 2 procedures of TMB2 based on the SA WG2 conclusions in TR 23.746.
Although the main focus of the work is to define TMB2, the work is expected to consider forward compatibility with the identified functionalities of the ongoing FS_xMBMS study item. SA WG4 will keep SA WG2 informed about the progress and the conclusions of the work.
Action: SA WG4 kindly asks SA WG2 to take the above information into account.

Discussion and conclusion:

Noted in parallel session.

TD S2-165475 LS from RAN WG2: Reply LS on Multiple RoHC Contexts for MMCMH. (RAN WG2) (Revision of TD S2-164930).
Abstract: RAN WG2 would like to thank SA WG4 for the LS on Multiple RoHC Contexts for MMCMH.
RAN WG2 confirms that RoHC supports multiple RoHC contexts for multiple flows within the same radio bearer. RAN WG2 also would like to inform SA WG4 that the number of RoHC contexts supported by the UE, excluding the context sessions with uncompressed header, is indicated as part of UE capability as follows.
ENUMERATED {cs2, cs4, cs8, cs12, cs16, cs24, cs32, cs48, cs64, cs128, cs256, cs512, cs1024, cs16384, spare2, spare1}
- where cs2 corresponds with 2 context sessions, cs4 corresponds with 4 and so on The number of RoHC contexts supported by the eNB is left for implementation and is not standardized or signalled.
The details of how the RoHC compressor/decompressor operates with respect to multiple contexts are not specified by 3GPP standards. RAN WG2 also understood that the 'Transcoder-free operation using fully-meshed media distribution' indicated in the SA WG4 LS would result in multiple radio bearers being used for multiple flows.
For this RAN WG2 would like to inform that the minimum requirement for the UE supporting VoLTE is to support 3 DRBs (Data Radio Bearers) with RLC-UM (Unacknowledged mode). RLC-UM is typically used for VoLTE among other services that may also use RLC-UM, e.g. Video.

Discussion and conclusion:

Revision of TD S2-164930. Noted in parallel session.

TD S2-165540 (DISCUSSION) EPS bearer release for ProSe UE-to-Network Relay. (Source: ASUSTeK).
Abstract: The disconnection of a Remote UE may require the deactivation and/or modification of the existing dedicated bearers for the PDN connection used for relaying.

Discussion and conclusion:

Moved from 6.28 (not on agenda). Noted in parallel session.

TD S2-165541 23.303 CR0321 (Rel-14, 'C'): EPS bearer release for ProSe UE-to-Network Relay. (Source: ASUSTeK).
Abstract: Summary of change: Include 'the disconnection of a Remote UE may require the deactivation and/or modification of the existing dedicated bearers for the PDN connection used for relaying' in the NOTE3 in clause 5.4.4.1.

Parallel comment: Cat A. New note clarifying that it is for implementation.

Discussion and conclusion:

Moved from 6.28 (not on agenda). Revised in parallel session to TD S2-166019. This was reviewed and approved.

TD S2-166020 (CR) 23.303 CR0322 (Rel-13, 'F'): EPS bearer release for ProSe UE-to-Network Relay. (Source: ASUSTeK).
Abstract: Summary of change: Include 'the disconnection of a Remote UE may require the deactivation and/or modification of the existing dedicated bearers for the PDN connection used for relaying' in the NOTE3 in clause 5.4.4.1.

Discussion and conclusion:

Created in parallel session. This was reviewed and approved.

TD S2-165700 23.246 CR0405 (Rel-14, 'F'): Corrections of MBMS Shared Network. (Source: Huawei, HiSilicon).
Abstract: Summary of change: Reworded subclause D.2.1 to make the text more generic and cover other relevant deployment scenarios. Reworded subclause D.2.3 to clarify the description of UE Scenario 1 and align the description of UE Scenario 3 with Annex E (Receive Only Mode).

Discussion and conclusion:

Revised in parallel session to TD S2-166021. This was reviewed and approved.

TD S2-165859 23.682 CR0245 (Rel-14, 'F'): Active Time correction in UE Power Save Mode. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: The reference is corrected to point to PSM Active Time note that explains the condition for short Active Time correctly.

Discussion and conclusion:

Revised in parallel session to TD S2-166022. This was reviewed and approved.

TD S2-166023 (CR) 23.682 CR0246: Active Time correction in UE Power Save Mode. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: The reference is corrected to point to PSM Active Time note that explains the condition for short Active Time correctly.

Discussion and conclusion:

Created in parallel session. This was reviewed and approved.

6.2 Rel-14 PCC/QoS Maintenance - essential corrections

This agenda item was convened by Shabnam Sultana (Ericsson).

TD S2-165479 LS from SA WG4: LS on QCI for CLUE Messages. (SA WG4)
Abstract: As part of the 3GPP IMS-based telepresence service specifications, SA WG4 would like to understand any QoS handling guidelines and receive any QCI recommendations to be used for the communication of CLUE messages over the DTLS/SCTP data transport channel. The use of CLUE messages over the DTLS/SCTP data transport channel is negotiated via SDP.
Action: SA WG4 kindly asks for information on the issue described above and requests pointers to any relevant 3GPP specifications.

Discussion and conclusion:

Response drafted in parallel session in TD S2-166090. Final response in TD S2-166287.

TD S2-166090 (LS OUT) Reply LS on QCI for CLUE Messages. To: SA WG4.

Discussion and conclusion:

Created in parallel session. Response to TD S2-165479. This was left for e-mail approval. Revision 1 approved. Revised to TD S2-166287. Approved.

TD S2-165664 (DISCUSSION) SDCI Pull and Push Mode Optimization. (Source: Nokia).
Abstract: This contribution discusses the problems when both pull and push mode is used to support SDCI features, and proposed the solution options for the optimization.

Parallel comment: It is considered stage 3/error handling issue, as such no stage 2 changes required. IF needed, stage 3 makes final decision.

Discussion and conclusion:

Noted in parallel session.

TD S2-165665 23.203 CR1067 (Rel-14, 'F'): Optimization for push mode and combination of pull and push mode. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: - Update the text for the combination of pull and push mode with the description on optimization. - Update PFD retrieval procedures with adding description on optimization when the combination of pull and push mode is supported - Update the 'push mode' procedure by adding the notification with allowed delay as an alternative.

Discussion and conclusion:

Noted in parallel session.

TD S2-165699 23.203 CR1068 (Rel-14, 'B'): QCI or/and ARP of the Default EPS Bearer change at a certain time on Gx. (Source: Verizon, Oracle, Nokia).
Abstract: Summary of change: The PCRF is enabled to request that the PCEF changes the QCI or/and ARP of the Default EPS Bearer at a specific point in time in the future.

Parallel comment: Two questions: Rel-14 Cat B, and meeting time for Nov to address Cat B. - Rework the whole soln. - Deferred Rules use - Handling of priority/MPS services.

Discussion and conclusion:

Revised in parallel session to TD S2-166091. This was withdrawn (not provided).

6.3 Rel-14 Non-3GPP Access Maintenance - essential corrections

This agenda item was convened by Krisztian Kiss (Apple).

6.4 Rel-14 IMS-Related Maintenance - essential corrections

This agenda item was convened by Krisztian Kiss (Apple).

TD S2-165903 LS from ETSI STQ: LS on IMS settings for UE testing. (ETSI STQ)
Abstract: In our work item DTS/STQ-232, ETSI TB STQ is developing an objective predictor for UE speech quality in background noise at super-wideband and fullband.
Subjective P.835 training databases for this activity are also being kindly provided by SA WG4 under their work-item DESUDAPS. Very near-term work will require subjective P.835 databases for validation purposes, for which it would be highly desirable that experimental conditions be developed from recordings of commercially-available UEs.
Recent work has shown that a lack of common test settings for IMS on UEs causes delays in testing, due to inability to register with the IMS server on base-station network simulators. ETSI TB STQ proposes that SA WG2 consider defining a mandatory test configuration of IMS settings to simplify testing.
This would not only reduce time and effort in developing the objective predictor, but would be of great benefit in future compliance and/or certification testing.
Action: SA WG2 to define a mandatory configuration of IMS settings to facilitate lab testing of UEs.

Discussion and conclusion:

LATE DOC: Rx 16/10, 11:00. Not Handled. Postponed to meeting #118.

TD S2-165573 [Draft] Additional information on Emergency numbers in IR.21. (TELECOM ITALIA S.p.A)
Abstract: To: GSMA NG SIGNAL. CC: GSMA NG.

Parallel comment: Delete 'value' from Service Category.

Discussion and conclusion:

Response to TD S2-164307 (already replied to at S2#116BIS in TD S2-165433). Revised in parallel session to TD S2-165943. Revised in parallel session to TD S2-165966. Agreed in parallel session. This was block approved.

TD S2-165849 23.167 CR0306 (Rel-14, 'F'): Correction from IMPI to IMPU. (Source: NTT DOCOMO).
Abstract: Summary of change: Changing IMPI to IMPU in step 9.

Parallel comment: Change IMPU to public user identity Change another instance of IMPI to public user identity in step 9.

Discussion and conclusion:

Revised in parallel session to TD S2-165945. Agreed in parallel session. This was block approved.

TD S2-165850 (LS OUT) Completion of SA WG3-LI Study TR 33.827 on S8HR. (NTT DOCOMO)
Abstract: Providing SA WG2 input on LS from SA to GSMA.

Discussion and conclusion:

Response to TD S2-165484. Revised in parallel session to TD S2-165946. Revised in parallel session to TD S2-166160. Revised in parallel session to TD S2-166231. Agreed in parallel session. This was block approved.

TD S2-165635 23.237 CR0498 (Rel-14, 'F'): Robust Call Setup for VoLTE subscriber in LTE. (Source: Huawei, HiSilicon).
Abstract: Summary of change: Regarding originating session, a note is added to remove the inconsistency between Stage 2 and Stage 3.

Parallel comment: Undelete step 10 Label previous step as step 8-9.

Discussion and conclusion:

Revised in parallel session to TD S2-165944. Agreed in parallel session. This was block approved.

TD S2-165652 23.292 CR0239 (Rel-14, 'F'): Correction of ICS IWF behaviour for inbound roamers. (Source: NEC).
Abstract: Summary of change: Misalignment of text and figure.

Discussion and conclusion:

Revised in parallel session to TD S2-165923. Agreed in parallel session. This was block approved.

TD S2-165796 23.167 CR0305 (Rel-14, 'F'): Update with SEW2 capabilities. (Source: Nokia).
Abstract: Summary of change: Add description that SEW2 supports both trusted (S2a) and untrusted (S2b) WLAN access for emergency session. Clarifies that the use of WLAN access to IMS without S2a or S2b for emergency session is not defined. Remove the limitation set from SEW1.

Parallel comment: Change the NOTE: This Annex only applies to EPC access over S2a or S2b.

Discussion and conclusion:

Revised in parallel session to TD S2-165947. Agreed in parallel session. This was block approved.

TD S2-165798 23.237 CR0499 (Rel-14, 'F'): DRVCC for emergency call with S2a/S2b only. (Source: Nokia).
Abstract: Summary of change: To limit emergency DRVCC for those with S2a/S2b, it is proposed to use network provided PANI as the trigger for allocating E-STN-SR. The WLAN call with WiFi Direct access would not have network provided PANI as the UE is connected directly to IMS without going via EPC.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

6.5 Support of Emergency services over WLAN (SEW2)

This topic was not on the agenda for this meeting.

6.6 S8 Home Routing Architecture for VoLTE (V8)

This topic was not on the agenda for this meeting.

6.7 Enhancements of Dedicated Core Networks selection mechanism (eDECOR)

This topic was not on the agenda for this meeting.

6.8 Control and User Plane Separation of EPC nodes (CUPS)

This agenda item was convened by Mirko Schramm (Huawei).

Clause 7 of TS - Parameters

TD S2-165876 (DISCUSSION) Discussion on Sx Parameters. (Source: Huawei).
Abstract: This contribution describes three kinds of alternative structure of Sx parameters which includes session level Sx parameters, bearer level parameters and SDF level parameters, and proposes to apply one of the alternatives.

Discussion and conclusion:

Noted in parallel session.

TD S2-165877 23.214 CR0011 (Rel-14, 'B'): Sx Parameters. (Source: Huawei, HiSilicon).
Abstract: Summary of change: - Describe rules for session, bearer and flow respectively. - In the flow level PDR, including flow level QER, URR and FAR. - In the flow level PDR, apart from referring to the flow level QER, URR and FAR, reference to the bearer level PDR is included. - In the bearer level PDR, apart from referring to the bearer level QER, URR and FAR, reference to the session level PDR is also included.

Discussion and conclusion:

Revised in parallel session to TD S2-166071. This was withdrawn (not provided).

TD S2-165554 23.214 CR0004 (Rel-14, 'B'): Sx parameter corrections. (Source: Ericsson).
Abstract: Summary of change: 1. Add 'at least' to indicate that additional values may be needed. CT WG4 can then decide on the actual value set. 2. A single FAR is used per PDR 3. Clarify that there are separate PDRs per direction (e.g. UL and DL) 4. Clarify that the 'Outer header removal' in the FAR may cover two headers 5. Limit Transport level marking in QER to only the case with DSCP marking of down-link traffic in TDF.

Discussion and conclusion:

Revised in parallel session to TD S2-166059. Revised in parallel session to TD S2-166177. Revised in parallel session to TD S2-166179. It was noticed that the Category should be 'F'. this was revised accordingly in TD S2-166273 which was approved.

TD S2-165495 (DISCUSSION) Controlling the UP to buffer, drop or duplicate data packets. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper is intended to discuss the changes required to the Sx parameters clause, which does not specify how to control the UP to buffer, drop or duplicate the data packets.

Discussion and conclusion:

Noted in parallel session.

TD S2-165496 23.214 CR0001 (Rel-14, 'F'): Controlling the UP to buffer, drop or duplicate data packets. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: - Introducing the Apply-Action parameter in the FAR, with the values 'Forward', 'Drop', 'Buffer' and 'Buffer and Report'; - Splitting the FAR into 'Forwarding parameters' and 'Buffering parameters'; - Adding the value 'SGi-LAN' to the Direction; - Detailing the number of FARs a PDR can point to, and whether they are used in parallel or in sequence.

Discussion and conclusion:

Revised in parallel session to TD S2-166060. Revised in parallel session to TD S2-166176. Noted in parallel session.

Clause 5 of TS - FTEID & buffering

TD S2-165556 (DISCUSSION) Discussion on mandatory support for TEID management and UP buffering. (Source: Ericsson).
Abstract: This contribution discusses TEID allocation and UP buffering and analyses whether they can be made mandatorily supported in CP or UP function.

Discussion and conclusion:

Noted in parallel session.

TD S2-165875 23.214 CR0010 (Rel-14, 'B'): Buffering and F-TEIDu Allocation. (Source: Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel).
Abstract: Summary of change: It is proposed: - The support of F-TEIDu allocation by the CP function is mandatory, and the support of F-TEIDu allocation by the UP function is optional. - The support of buffering in UP function is mandatory, and the support of buffering in CP function is optional. Corresponding description is added into the specification.

Discussion and conclusion:

Revised in parallel session to TD S2-166061. Revised in parallel session to TD S2-166175. Agreed in parallel session. This was block approved.

TD S2-165498 (DISCUSSION) Discussion on buffering in the user plane. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper discusses the mechanisms for buffering in the user plane, and proposes restructuring section 5.9.3 as well as additional corrections and clarifications.

Discussion and conclusion:

Noted in parallel session.

TD S2-165499 23.214 CR0003 (Rel-14, 'F'): Corrections to buffering in the user plane. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: - Re-structuring clause 5.9.3 with the separated description of the different mechanisms; - Correcting the Delay DDN mechanism for the case the SGW-U handles the D parameter; - Specifying that the DL Buffering Suggested Packet Count shall be handled in the UP, whereas the DL Buffering Duration may be handled in either CP or UP; - Correcting the Throttling mechanism to take into account the case SGW-U handles the Throttling Delay Timer.

Discussion and conclusion:

Revised in parallel session to TD S2-166062. Revised in parallel session to TD S2-166174. Agreed in parallel session. This was block approved.

Clause 5 of TS - UP function selection

TD S2-165497 23.214 CR0002 (Rel-14, 'F'): Corrections to User Plane selection function. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: - The text 'over the S5 interface' is added to 5.12.2 and removed from 5.13.2. - Text related to the use of UE Location Information is corrected.

Discussion and conclusion:

Revised in parallel session to TD S2-166064. Revised in parallel session to TD S2-166078. Agreed in parallel session. This was block approved.

TD S2-165746 23.214 CR0007 (Rel-14, 'C'): Update to UP Selection Section. (Source: Samsung).
Abstract: Summary of change: This contribution proposes updates to section 4.3.3 regarding user plane function selection to add more selection impacting factors.

Discussion and conclusion:

Revised in parallel session to TD S2-166063. Revised in parallel session to TD S2-166077. Agreed in parallel session. This was block approved.

TD S2-165888 23.214 CR0014 (Rel-14, 'B'): Solution of TDF-U Selection in case of Unsolicited Reporting. (Source: Huawei, HiSilicon).
Abstract: Summary of change: It is clarified that in case of unsolicited reporting, the TDF-C select the TDF-U before the start of the Sx management procedure.

Discussion and conclusion:

Revised in parallel session to TD S2-166065. Revised in parallel session to TD S2-166076. Revised in parallel session to TD S2-166215. Agreed in parallel session. This was block approved.

Clause 5 of TS - other functionality

TD S2-165663 23.214 CR0006 (Rel-14, 'F'): Update to PCC/ADC related functions. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: The case of traffic detection filters (i.e. service data flow filter(s) or application detection filter) and the traffic steering policy information preconfigured in the CP function is removed, and the descriptions for the following features are simplified: - Activation/Deactivation of predefined PCC/ADC rules - Enforcement of dynamic PCC/ADC rules.

Discussion and conclusion:

Revised in parallel session to TD S2-166066. Revised in parallel session to TD S2-166178. Revised in parallel session to TD S2-166214. This was reviewed and approved.

TD S2-165886 23.214 CR0012 (Rel-14, 'B'): Support of PGW Pause of Charging. (Source: Huawei, HiSilicon).
Abstract: Summary of change: Propose the solution of PGW pause of charging in CUPS.

Discussion and conclusion:

Revised in parallel session to TD S2-166067. Revised in parallel session to TD S2-166075. Revised in parallel session to TD S2-166213. Agreed in parallel session. This was block approved.

Clause 6 of TS - Flows

TD S2-165750 23.214 CR0008 (Rel-14, 'C'): Text updates for 3GPP TS 23.401 call flows. (Source: Samsung).
Abstract: Summary of change: This contribution proposes to remove PDN Session Correlation Id and Bearer Info from the parameters passed from the Control Plane of the Serving GW to the User Plane of the Serving GW. This changes are relevant to section 6.3.1 of TS 23.214.

Discussion and conclusion:

Revised in parallel session to TD S2-166068. Revised in parallel session to TD S2-166074. Agreed in parallel session This was block approved.

TD S2-165753 23.214 CR0009 (Rel-14, 'C'): Text updates for 3GPP TS 23.402 call flows. (Source: Samsung).
Abstract: Summary of change: This contribution proposes to remove PDN Session Correlation Id and Bearer Info from the parameters passed from the Control Plane of the Serving GW to the User Plane of the Serving GW. This changes are relevant to section 6.3.3 of TS 23.214.

Discussion and conclusion:

Revised in parallel session to TD S2-166069. Revised in parallel session to TD S2-166073. Agreed in parallel session. This was block approved.

TD S2-165887 23.214 CR0013 (Rel-14, 'B'): Sx Session Level Reporting Procedure Update. (Source: Huawei, HiSilicon).
Abstract: Summary of change: Clarify several reporting triggers in Sx session level reporting procedure.

Discussion and conclusion:

Revised in parallel session to TD S2-166070. Revised in parallel session to TD S2-166072. Agreed in parallel session. This required some editorial corrections and was revised to TD S2-166274. This was left for e-mail approval. e-mail approved.

Impact of other Rel-14 features

TD S2-165555 (DISCUSSION) CUPS and SDCI interactions. (Source: Ericsson).
Abstract: This contribution discussed alternatives for CUPS and SDCI interactions and proposes a way forward.

Discussion and conclusion:

Noted in parallel session.

TD S2-165661 (DISCUSSION) Functional split for SDCI. (Source: Nokia).
Abstract: This contribution discusses the solutions on how to apply SDCI in CUPS with the evaluation to different options, and proposed that PFDF interfaces with PCEF/TDF CP function for the management of PFD(s).

Discussion and conclusion:

Noted in parallel session.

TD S2-165662 23.214 CR0005 (Rel-14, 'B'): SDCI support. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Summary of change: In order to support SDCI features, it is proposed that: - PFD caching and enforcement are performed in the PGW/TDF UP function; - PFDF manages the PFD(s) through PGW/TDF CP function (Gw/Gwn at CP function) Therefore there are following changes to TS 23.214: - Update the architecture reference model to include Gw/Gwn (4.2) - Update high level functions to include SDCI features (4.3.1, 4.3.2.2, 4.3.2.3) - Add a new section under 5.11 to include functional split of SDCI - Add procedures of SDCI push and pull mode under 6.3.2 - Add parameters of PFD and PFD management actions (7.3).

Parallel comment: Working assumption to terminate Gw/Gwn with the PFDF at the CP function.

Discussion and conclusion:

Noted in parallel session.

6.9 Improvement of awareness of user location change (AULC)

This topic was not on the agenda for this meeting.

6.10 Study on Architecture for Next Generation System (FS_NextGen)

From some papers/TDs that proposed solution updates and interim agreements only the part on the interim agreement was handled.

Also, some of those TDs show in their approved TD revision version the not handled part as deleted, which shall not be understood as deleting the related solution.

SA WG2#117 has not approved any deletion of any solutions from the NextGen TR 23.799.

TD S2-165774 LS from ETSI NFV: LS OUT on NFV-based solutions for next generation mobile networks. (ETSI NFV)

Abstract: ETSI ISG NFV sees Network Functions Virtualisation as a major technology enabler for the development of 5G networks. We are therefore fostering collaboration with organizations supporting 5G standardization efforts, in areas where NFV is involved.

We understand that SA WG2 are conducting a study on next generation network architecture, and SA WG5 have started a number of studies related to management of next generation networks and services. As we understand that the implementation and deployment of 5G services is to leverage the virtualisation technologies, we would like to share with you our work and experience on the design of network functions that might help you to maximize the benefits of using this technology:

a) 5G network functions may benefit from the Virtual Network Function (VNF) descriptor and VNF package defined in GS NFV IFA 011.
b) 5G network functions may benefit from virtualisation technologies such as containers (e.g., as described in GS NFV EVE 004)
c) 5G network functions may make use of the guidelines for testing interoperability of virtualised implementations with virtualised infrastructure and management systems, as described in GS NFV TST 002
d) Virtualised implementations of 5G network functions may be instantiated, terminated and version updated more rapidly than traditional physical implementations (e.g. as described in GS NFV SWA 001 and GS NFV IFA documents)
e) 5G network functions may consider the security implications of deployments on virtualised infrastructures (e.g., as described in GS NFV SEC documents)
f) Architecture of 5G network functions may consider virtualised functional components for efficient deployment, operation, elasticity and dynamicity of the networks (e.g., as described in GS NFV SWA 001)
g) ETSI ISG NFV believes that the design of procedures such as selection and reselection (e.g. selection of mobility related entities) may take into account the potential dynamic nature of function placement. Lifecycle operations performed over a specific function are essentially of dynamic nature (e.g., as described in GS NFV IFA 007 and GS NFV IFA 008). Lifecycle operations and orchestration of network functions introduces some variations regarding the placement and deployment of network functions. In the ETSI NFV architecture, it is the NFV Orchestrator (NFVO) that keeps a map of the Point of Presences (PoPs) where specific network functions are deployed and introduces dynamic VNF allocation within the deployed networks.
h) Network slicing management may relate to Network Service (NS) management. NS management and NS Descriptors concepts are defined in GS NFV IFA 013 and GS NFV IFA 014.
i) 5G network functions may make use of the guidelines for service availability and reliability with service differentiation, as described in GS NFV REL 003

ETSI ISG NFV has not initiated any studies on the virtualization aspects of the 5G architectures, hence all the topics listed in LS are for exemplifications purposes that 3GPP may consider during the development of the next generation architecture. ETSI ISG NFV will be pleased to provide any additional clarification on the topics listed. ISG NFV published specifications are available at http://www.etsi.org/technologies-clusters/technologies/nfv or all NFV specifications may be found via https://portal.etsi.org/webapp/WorkProgram/SimpleSearch/.

Action: To SA WG2, SA WG3, and SA WG5: ETSI ISG NFV respectfully asks to take the above information into account in their ongoing work, to share the timeframe for actual development of the next generation architectural specifications in order to align our activities, and to provide any feedback they consider appropriate regarding the principles and references provided above.

Discussion and conclusion:

Delegates were encouraged to familiar themselves with the ongoing work in ETSI NFV and to consider where coordination with SA WG2 NextGen work is needed. This LS was then postponed to meeting SA WG2#118.

TD S2-165477 LS from SA WG1: LS on 5G work alignment. (SA WG1) (Revision of TD S2-164972).
Abstract: SA WG1 would like to inform RAN and SA WG2 that SA WG1 has started normative work on SMARTER (targeted final approval date as SA#75 (Mar. 2017)), which aims to specify the requirements in order to enable the new services and markets.
Please also find the agreements we have made so far in the attached draft SMARTER TS. It is widely acknowledged the importance of Stage 1 normative work to be coordinated with other WGs' 5G work based on the timeline for NR study in RAN WGs and NextGen study in SA WGs.
Therefore it is appreciated if RAN and SA WG2 can update SA WG1 with the priorities and timing for your 5G work.
Action: RAN and SA WG2 kindly keep SA WG1 updated with the priorities and timing for your 5G work.

Discussion and conclusion:

Revision of TD S2-164972. It was commented that the prioritisation of the work can only be done when the normative WID is agreed. Nokia suggested that this LS is noted and SA WG2 should inform SA WG1 of the status and priorities at the end of the study. Vodafone suggested delegates review the attached requirements document. Intel commented that SA WG2 could indicate which requirements are Phase 1 and which are considered as Phase 2. Intel undertook to draft a response LS to SA WG1, which was provided in TD S2-165915. Final response in TD S2-166238.

TD S2-165915 (LS OUT) [DRAFT] LS on 5G work alignment.
Abstract: To: SA WG1. CC: TSG SA, TSG RAN, SA WG3. Attachment: TD S2-164207.

Discussion and conclusion:

Some corrections were made and this was revised also to remove 'draft' and remove revision marks in TD S2-166238 which was Agreed in parallel session. This was block approved.

TD S2-165489 LS from ITU-R WP 4B: INVITATION TO CONSIDER INTEGRATION OF SATELLITE-BASED SOLUTIONS INTO IMT-2020 NETWORKS. (ITU-R WP 4B)
Abstract: At its meeting in Geneva from 26 - 30 September 2016, WP 4B recognized the importance of a tight integration of satellite as part of the overall IMT-2020 ('5G') architecture and networks solutions, and the need to reflect such integration into the ongoing standardization efforts as appropriate.
WP 4B has made a preliminary assessment of the rationale and key elements to be considered in this respect, which is included in the Working Document towards a Preliminary Draft New Report ITU-R M.[IMT-2020_SAT] 'Key requirements for integration of satellite systems into IMT-2020 networks', see Annex 3 to Document 4B/44.
This liaison statement is directed to those groups from which action is required to carefully consider the requirements set out in the above mentioned document and to incorporate the necessary changes into ongoing standardization roadmap and actions, in order that satellite services can fully support the roll-out of 5G networks and services as soon as 2020.
In this regard, 3GPP, ETSI TC/SES, ITU-R WP 5D and ITU-T SG 13 are kindly invited to liaise with WP 4B for any requirement resulting from their work that may fall within the scope of WP 4B and, whenever deemed appropriate.
WP 4B would be grateful to receive regular progress updates on related matters.
Finally, thanking in advance for your cooperation, the next meeting of WP 4B is planned to take place on May 1st to May 5th 2017.

Discussion and conclusion:

This LS was reviewed and noted.

TD S2-165491 LS from SA WG3: LS on NG authentication functions. (SA WG3)
Abstract: SA WG3 would like to inform SA WG2 that SA WG3 has agreed on the following four functions related to authentication in NG:
- Authentication Credential Repository and Processing Function (ARPF)
- Authentication Server Function (AUSF)
- Security Anchor Function (SEAF)
- Security Context Management Function (SCMF)

The definitions of these functions are given in the attachment. It is ffs for which cases reference points between the above authentication-related functions, and between any of these and other functions that may be defined by SA WG2 need to be standardised.
Action: SA WG2 is kindly asked to take the NG authentication functions agreed by SA WG3 into account in their NG architecture work.

Discussion and conclusion:

The definitions provided by SA WG3 should be reviewed and any architectural impacts of the placement of security functions should be identified. Any issues can be raised in an LS at a future meeting. This was then noted.

TD S2-165492 LS from SA WG3: Update on definitions of identifiers. (SA WG3)
Abstract: SA WG3 recognized a need for clarifying definitions of the various identifiers used in Next Generation networks.
SA WG3 would like to inform SA WG1 that there is an agreement, and the latest approved definitions can be found in section 3.1 of TR 33.899. SA WG3 would also like to inform that subscriber privacy aspects are currently being studied in security area #7, and new solutions are being documented under section 5.7.4 in TR 33.899. As part of this work on security area #7, SA WG3 also defines temporary identifiers.

Discussion and conclusion:

This LS was reviewed and noted.

TD S2-165640 (P-CR) Correction of implementation error. (Source: LG Electronics).
Abstract: This contribution proposes a correction of implementation error.

Discussion and conclusion:

This implementation correction was reviewed and approved.

TD S2-165566 LS to GSMA on NextGen Roaming. (AT&T)
Abstract: The topic of NextGen Roaming came up during SA WG2#116BIS meeting. It was suggested during these discussions that as 3GPP work moves from study to normative phase GSMA should be requested to provide feedback on NextGen roaming aspects. Their input can then be considered during the normative Release 15 work. This contribution proposes a draft LS for this purpose.

Discussion and conclusion:

AT&T clarified that the GSMA have not yet considered NextGen roaming aspects. MediaTek commented that it would be useful to include some roaming scenarios to be considered. Cisco commented that it may be better to wait until SA WG2 have developed the architecture proposals further before asking the GSMA to do this. AT&T were asked to include some specific issues that were raised in the slicing discussions related to roaming protocols and interfaces. This was left for further off-line discussion and revised in TD S2-165916. MediaTek commented that the latest version of the TR will not be available until updated by the Rapporteur and GSMA may take the current version. Some text to indicate the next version 1.1.0 should be added. The action should be clarified and this was left for further off-line discussion and revised in TD S2-166239. This was left for e-mail approval. e-mail revision 2 approved. Revised in TD S2-166290. Approved.

TD S2-165483 LS from TSG SA: Reply LS on Cooperation on NGS FMC. (TSG SA)
Abstract: TSG SA thanks SA WG2 for the LS on cooperation on 5G FMC with BBF as well as BBF for the originating LS to SA WG2. Furthermore TSG SA welcomes the initiative from BBF for establishing an inter-SDO cooperation between 3GPP and BBF dedicated to driving FMC for the Next Gen System (NGS).
TSG SA supports the goal to avoid duplication of work and specifications as well as to progress work on key items already identified by SA WG2 and by BBF.
TSG SA endorses the informal conference call between SA WG2 and BBF as well as the expert workshop to scope the cooperation and identify the work areas. TSG SA chair in collaboration with BBF leadership will take the necessary steps to work on the procedures, agenda and list of participants to set up the close cooperation and workshop arrangements.
Furthermore TSG SA wants to inform BBF, that TSG SA#73 updated the time schedule of the TR 23.799 'Study on Architecture for Next Generation System' to be approved in TSG SA#74 in Dec 2016. Next steps agreed and endorsed by TSG SA#73:
- October 2016: SA WG2-BBF conference call to identify potential areas of collaboration at the system architecture level for the discussion at the workshop
- Q1 2017: 3GPP-BBF expert workshop - the Objective: of the workshop is to identify the next steps to improve the collaboration between 3GPP and BBF.

Action: TSG SA encourages SA WG2 to progress the collaboration with BBF and support the TSG SA chair on the next steps.

Discussion and conclusion:

The SA WG2 Chairman commented that the scope of the workshop needs to be defined before any planning of the dates and venue for a workshop can be identified and proposed. If 1 or 2 sessions are needed, then it may be possible to include this in a SA WG2 meeting, otherwise if 1 or 2 days are needed, the workshop will need to be scheduled before or after a SA WG2 meeting to reduce delegates' travel. Huawei commented that it would more likely be scheduled for February 2017 rather than January 2017 and asked whether it was decided to hold another conference call to discuss the scope of the workshop. Vodafone commented that one topic would be QoS model. Telekom Deutschland reported that the Common Functions from BBF are to be updated and may be a topic for the workshop. Telekom Deutschland were asked to make a list of topics for discussion. This LS was then noted.

Show of hands for agreement of NextGen open questions

TD S2-166145 (OTHER) NextGen questions for coming to agreement on conclusions. (Source: Drafting convenor (Nokia)).
Abstract: Consolidate the open questions raised during NextGen discussions during SA WG2#117.

Discussion and conclusion:

Questions raised during Overall architecture session - For "show of hands"

1) Should we support service based architecture or PtP Reference points within NG Control Plane?
Proposal: Within NG CP it will be considered to apply service based, but case by case for each procedure via those interfaces
- Reference: TD S2-166050 for Service based architecture.
- Decision proposal: NG1 is excluded from being a service based interface.

- **Decision proposal:** Show an architecture with reference points and service based interfaces. Define service based interfaces for network functions (e.g. PCF, AUF) and procedures where it makes sense.
Q1 skipped.

2) Should NG2 (RAN - Core) interface be defined with service based architecture?
Qualcomm: This is not under SA WG2 control, so no decision can be made on this. Vodafone: Not clear what consequences will be, but it is a SA WG2 decision, not RAN WG3. Qualcomm: This will at least need to be jointly decided with RAN WG3. Vodafone: Need clarification of what a service-based architecture is. Intel: It is the function which is service based allowing any access to the service.
Q2 skipped.

- 3) Should NG4 interface be defined with service based architecture?
Q3 skipped.

- 4) Should we support message bus/MRFF for communication between 2 NFs for every communication?
  - Refer: TR 23.799 architecture option 4

Qualcomm: What is meant by 'message bus' in this context? China Mobile: This is related to the service-based model. Nokia: MRFF is described in 23.799 clause 7.4.1. DOCOMO: Questions 4, 5

and 6 are answered by Question 1. Qualcomm: This is an optional function, so does the option work when there is no MRFF? Cisco: Without MRFF each NE would need to discover the NFs themselves.

Show of hands:

Q4: Should we support an MRFF as an optional function for facilitating communication between 2 NFs for every communication?

Yes: 2
No: 3

- 5) Should we support message bus/IRF for communication between 2 NFs for every communication?
  - Refer: TR 23.799 architecture option 1

Deutsche Telekom: This is the same as Question 4. Cisco: IRF is comparable to MRFF for every communication, but excluding NG2 and NG4. Deutsche Telekom: What about support for UDM? Vodafone: Can IRF be an optional function?

Show of hands:

Q5: Is IRF mandatory for all communications between 2 NFs, excluding NG2 and NG4?

Yes: 6
No: 9

Show of hands:

Q5bis: Should direct communication between 2 NFs within the Control Plane that need to interact with each other for a procedure be supported? - without excluding that a need for an intermediate function (e.g. like a DRA) may be identified for specific cases

Yes: 15
No: 3

-->> Working assumption?

- 6) Do we need a NF (MIF) (for NAS termination, interfacing to UDM, roaming interface) as proposed in TD S2-165651?
  - Refer: For MIF, refer TD S2-165651.

Qualcomm: MIF is part of another architecture and may contain other functions so why do we need MIF? Nokia: Original proposal was for a 'stand-alone' termination. General: Need to determine if this can be decoupled from MM. China Mobile: Should we add NG4?

Q6: Do we need a NF that terminates NAS security and NG2?

More concrete proposal required, suitable for evaluations. Or evaluations specifically invited.

Q6bis: Is NAS security termination collocated with MMNF?

Depends on developments related to Q6.

- 7) Should Rel15 support Information exchange (exposure) between different NF via Information repository in a standardized manner?
  - Refer: TD S2-165645, TD S2-165772, TD S2-165775

Cisco: Should indicate specific information exchange which has been identified. Vodafone: Envisage a repository where requests for e.g. Cell ID, can be retrieved by simple requests. Nokia: The Information repository does not mean all information exchange is via the data layer. Qualcomm: Is this an additional functionality or essential for procedures? Nokia: Need to keep the Information repository. Cisco: It is premature to decide on this as the validity of the solution is unclear.

Includes questions:

a) Do we want network capability exposure?
b) What entity is responsible for storing and exposing the related information?

Show of hands:

i) Should we ask Question 7 at the November meeting to allow more time for evaluation of this?
10

ii) Who thinks we should ask Question 7 now?
6

Q7: Should Rel-15 support Information exchange (exposure) of selected information, like ULI (specific information to be decided on a case-by-case basis) between different NF via a 'data layer' in a standardized manner?

Depends on developments related to Q6.

- 8) Should Rel-15 support Network function with standardized interface to Information repository for UE context?
  - Refer: TD S2-165772, TD S2-165775, TD S2-165801, TD S2-165902

  Q8 skipped.

- 9) In Rel-15, should MMF and SMF functionality be split with a standardized reference point?
  - Refer TR 23.799 architecture option 6.

  Ericsson: This is a good question but would like to consider the split of SMF and MMF separately. Nokia: We should not decide on the use of a new reference point. Cisco: Should use 'interface' instead. Nokia: Would need to decide where the MM and SM functions terminate.

Show of hands:
Q9: In Rel-15, should MMF and SMF functions be standardized as separate functions with a standardized interactions?
No company says 'no'.
-->> Interim agreement.

Show of hands:
Q9a: Do NAS MM and SM protocol parts/messages terminate in MMF and SMF respectively? Independent from any vSMF/hSMF questions.
Yes: 17
No: 0
-->> Interim agreement.

Q9b: Are NAS SM messages routed via MMF?
Yes: Existing interim agreement.

Q9c: In case of home routed, does NAS SM protocol /message terminate in vSMF or hSMF?
This Question should be considered for the November meeting.

This was revised with discussions and agreements in TD S2-166147. Review of questions was continued:

- 10) Should SEAF (security anchor function), SCMF (security context management function) be mapped to a standalone authentication function (AUF)?
  - Refer TR 23.799 architecture option 6. Refer TD S2-165491.

  It was commented that the corresponding proposal is in TD S2-165491. There were some issues raised on the definitions and this should question be left until the November meeting.

Q10: Should SEAF (security anchor function), SCMF (security context management function) be mapped to a standalone authentication function (AUF)?
This Question should be considered for the November meeting.

- 11) Should SEAF (security anchor function), SCMF (security context management function) be mapped to a standalone Mobility Management function (MMF)?
  - Refer TD S2-165563.

  There were some issues raised on the definitions and this should question be left until the November meeting.

Q11: Should SEAF (security anchor function), SCMF (security context management function) be mapped to a standalone Mobility Management function (MMF)?
This Question should be considered for the November meeting.

Questions raised during Overall architecture, SM session - For "show of hands":

- 12) Home routed scenario - Can H-SMF obtain subscription data via MMF, SMF in the serving network?

  This question needed to be re-worded to consider roaming scenarios. The question needed splitting to multiple issues. To be considered for the November meeting.

Q12: Which entity decides whether a PDU session becomes home routed? v-SMF, hSMF, other??
This Question should be considered for the November meeting.
Q12a: Home routed scenario - Does H-SMF obtain subscription data via MMF and relayed via vSMF in the serving network, e.g. for authorizing PDU session?
This Question should be considered for the November meeting.
Q12b: Home routed scenario - Does the H-SMF obtain subscription data directly from SDM?
This Question should be considered for the November meeting.

- 13) Home routed scenario - Can H-SMF obtain subscription data directly from SDM?
  This question was renumbered to question 12b.

- 14) Non-roaming, LBO scenario - Can SMF in the serving network obtain subscription data directly from SDM?
  The question needed splitting to two issues. To be considered for the November meeting.

Q14: Non-roaming, and for LBO scenario - Does the SMF in the serving network obtain subscription data directly from SDM?
This Question should be considered for the November meeting.

Q14b: Non-roaming, LBO scenario - Does the SMF in the serving network obtain subscription data via MMF in the serving network?
This Question should be considered for the November meeting.

- 15) Non-roaming, LBO scenario - Can SMF in the serving network obtain subscription data via MMF in the serving network?
  This question was renumbered to question 14b.

Questions raised during NS session - For "show of hands"

- 16) Decision proposal - NSISF (Network Slice Instance Selection Function) is assumed to be part of CCNF (Common Control Network Function) in Rel-15, i.e. no open interface will be specified between NSISF and CCNF in Rel-15.
  The functionality of CCNF needs to be clarified and it needs to be determined whether NSISF it is a stand-alone function or a set of functions.

Show of hands:
Q16a: Does an NSISF exist as a standalone function with a standardized interface?
Yes: 6
No: 11
This Question should be reconsidered for the November meeting.

Questions raised during Mobility Management - For "show of hands"

- 17) Whether we should define a mobility level implying certain attributes or define mobility pattern with individual parameters that are negotiated?
  The question needed to be clarified. The mobility level and mobility pattern concepts and their interactions need to be defined (single level or set of parameters) and the use of UE assistance etc. also needs to be considered. There were several issues which need several questions. (Geographic subscription parameter question added as Question 17).

Show of hands:
Q17: Can a geographic subscription parameter restrict the (service) area within a UE (e.g. for fixed access) may obtain services from the network?
No company says 'no'.

Show of hands:
Q17bis: Do we need to specify mobility pattern and/or mobility level as a parameter on its own?
No company says 'yes'.

- 18) Should UE and network support cell list based tracking area update procedure?
  Ericsson: Cell list concept was developed for tracking in Rel-13 and did not think this should be complicated. The question should be split into two.

Show of hands:
Q18a: Should UE and core network support tracking area list as registration area?
No company says 'no'.
Show of hands (for status indication for this question)**:**
Q18b: Should UE and core network support cell list as registration area?
Yes: 4
No: 3
This Question should be reconsidered for the November meeting.

Questions raised during Policy Framework - For "show of hands"

- 19) Do we need V-PCF to H-PCF interface for LBO scenarios?
  Ericsson: It is not clear what this will be used for as local policies can be used. Cisco: For VoLTE, policies are at service level. GSMA doesn't require S9 for this.

Q19: Do we need V-PCF to H-PCF interface for LBO scenarios? or are local policies sufficient? For information: for VoLTE policies are at service level. GSMA doesn't require S9 for this.

This Question should be reconsidered for the November meeting.

Questions raised during QoS - For "show of hands"

- 20) Should we support reflective QoS over NG3 (User plane) or NG1 (Signalling)?
  Note: Reflective QoS support over AS from RAN to UE is up for RAN WG2 to decide.
  Intel: This should be briefly discussed and reconsidered at the November meeting. Intel: The note should be clarified. Orange asked for the question to split to enable each interface to be decided independently. Vodafone: Granularity should also be considered for the Signalling option.

Q20a: Should NG3 (User plane) support activation/deactivation of reflective QoS?
Q20b: Should NG1 (Signalling) support activation/deactivation of reflective QoS?
Q20b1..3: With what granularity: PDN session, GBR 'bearer', other?
Q20c: Should NG3 (User plane) and NG1 (Signalling) support activation/deactivation of reflective QoS?

NOTE: For the NG3 (User plane) option, transport support for Reflective QoS may require RAN involvement.

These Questions should be reconsidered for the November meeting.

This was revised with discussions and agreements in TD S2-166172 which was endorsed and the agreements were extracted for inclusion in the TR in TD S2-166173.

TD S2-166173 (P-CR) Interim agreements Extracted from Show of hands on Thursday, October 20. (Source: Nokia).
Abstract: Interim agreements extracted from TD S2-166172.

Discussion and conclusion:

AT&T commented that bullet 5 of 8.3 had an outstanding question for the November meeting and asked to update to '*at least support*'. It was requested to change mobility pattern '*and/or*' mobility level to '*a.k.a*' and replace '*on its own*' with '*via standardized interfaces*'. Nokia commented that naming should be reviewed at a future meeting. It was suggested to change in 8x, '*NAS SM messages are routed **via** MMF*' to '*NAS SM messages are routed **by** the MMF*'. Other text clarifications were also agreed and this was revised accordingly in TD S2-166237 which was Agreed in parallel session. This was block approved.

Deutsche Telekom asked for the following to be included in this report:

Deutsche Telekom stated that several of the interim agreements implicitly invalidated Deutsche Telekom's preferred solutions (e.g. related to consolidated architecture option 4, modularization of network functions, network cloudification), and thereby prevent the innovative steps that Deutsche Telekom require from NextGen. Therefore Deutsche Telekom disagreed with the approval of these interim agreements.

6.10.0 Input for TR clauses 1-4 and new proposed key issues

This topic was not on the agenda for this meeting.

6.10.1 Updates and solutions for key issue 1: Support of network slicing

TD S2-166051 (DISCUSSION) Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing. (Source: Drafting Editor (Nokia)).
Abstract: This contribution proposes a merged interim agreements paper based on the inputs to this meeting.

Discussion and conclusion:

Created in drafting session. The identified topics were reviewed and some discussion and clarifications were made to try to come to a tentative agreement on the functions that should be worked upon. This was discussed off-line and returned to in the parallel session and was edited on-line to capture agreements as far as possible. This was revised in TD S2-166097. Revised in drafting session to TD S2-166024. Not handled.

TD S2-166146 (DISCUSSION) Update to section 8.1. Interim agreements based on drafting at SA WG2#117. (Source: Drafting Editor (Nokia)).
Abstract: This contribution proposes a set of agreements to be documented in the TR based on drafting at SA WG2#117 as documented in TD S2-166024.

Discussion and conclusion:

Created at the meeting. The update based on drafting session comments was reviewed and corrections proposed and the document edited on-screen. This was revised to TD S2-166210 which was Agreed in parallel session. This was block approved.

TD S2-166055 (DISCUSSION) Observations on Network Slicing Approaches. (Source: Qualcomm Inc).
Abstract: Observations on Network Slicing Approaches.

Discussion and conclusion:

Created at meeting. Not Handled.

TD S2-165904 LS from NGMN: Update to NGMN Description of Network Slicing Concept. (NGMN)
Abstract: Intention of the LS and required actions: Since our previous liaison in January 2016 the NGMN Requirements and Architecture (P1) WS1 E2E Architecture group has been updating and adding to the Network Slicing paper which we shared at that time. NGMN kindly requests SA WG2 to consider the attached revision of our Network Slicing paper and to view it as an input to your ongoing study defining the probable architectural requirements for 5G.
NGMN kindly requests ETSI ISG NFV to consider the attached document as an input to any ongoing or future work on the composition and management of virtualised networks or sub-networks.

Discussion and conclusion:

LATE DOC: Rx 16/10, 11:00. Incorrect attachment. Resubmitted in TD S2-166087. Withdrawn.

TD S2-166087 LS from NGMN: Update to NGMN Description of Network Slicing Concept. (NGMN)
Abstract: Intention of the LS and required actions: Since our previous liaison in January 2016 the NGMN Requirements and Architecture (P1) WS1 E2E Architecture group has been updating and adding to the Network Slicing paper which we shared at that time. NGMN kindly requests SA WG2 to consider the attached revision of our Network Slicing paper and to view it as an input to your ongoing study defining the probable architectural requirements for 5G.
NGMN kindly requests ETSI ISG NFV to consider the attached document as an input to any ongoing or future work on the composition and management of virtualised networks or sub-networks.

Discussion and conclusion:

LATE DOC: Rx 18/10, 11:20. Replacement of TD S2-165904 with correct attachment (161010 Network Slicing framework v1.0.8.docx). Not Handled. Postponed to meeting #118.

TD S2-165696 (DISCUSSION) Network slicing way forward. (Source: Nokia, ZTE, Telecom Italia, KDDI, InterDigital, SAMSUNG, ETRI, KPN).
Abstract: Summary: A. Move forward with Option B type of solution in Rel-15 (Group C is subsumed by Group B) B. Agree we need to support simultaneous access to >1 Slices per UE C. Agree that we want to address the aspects of tenancy/SLA and behaviour based differentiation, so we need an MDDV D. Agree that we do need to allow for standardised and non standardized MDDVs E. Agree that D+C may mean a structured MDDVs F. Agree MM, AU, NSI selector at least are in the CCNF G. Selection and change of CCNF is strictly under operator control H. Agree that PLMN access, slice access, DNN access may require independent authentication&authorization. I. Routing in RAN of NAS signalling can be based on Temp ID or MDD. Default routing of NAS signalling applies if no specific policy is matched in RAN. J. RAN and CN part of network slice are supported (for RAN slicing to work the RRC layer needs to convey the MDD) K. Slice specific functions instance selection based on MDDV and other information in the CCNF L. Addition/removal of MDDVs and related network slices should be supported M. Roaming support may be based on roaming agreements for slicing or based on standardized MDDV only - default behaviour is no slice applies in roaming other than an inbound roamer slice. N. Non 3GPP support dependent on Non 3GPP support solution for Rel 15. The text here above is expected to apply to TSG RAN only for RAN-specific aspects. O. Any Further Optimisations with regard to the slicing solution should be discussed in Normative phase.

Discussion and conclusion:

Not Handled.

TD S2-165616 (P-CR) Deprioritizing Group A architecture for network slicing. (Source: LG Electronics Inc., SK Telecom).
Abstract: This contribution proposes to add interim agreements on network slicing, deprioritizing group A slicing architecture in Annex D in the first phase.

Discussion and conclusion:

Not Handled.

TD S2-165698 (P-CR) Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing. (Source: Nokia, Telecom Italia, ZTE, InterDigital, KDDI, Samsung, ETRI, KPN).
Abstract: This contribution proposes a set of agreements to be documented in the TR based on a proposed way forward documented in S2-165696.

Discussion and conclusion:

Not Handled.

TD S2-165762 (P-CR) Way forward on Solutions for Key Issue 1 on Network Slicing. (Source: Qualcomm Incorporated).
Abstract: the paper introduces a compromise proposal between various slicing solutions that enables a more granular selection of both CN and RAN resources for network slicing.

Discussion and conclusion:

Not Handled.

TD S2-165485 (DISCUSSION) Recommended principles for network slicing. (Source: MediaTek Inc).
Abstract: This contribution reviews the different solutions for network slicing and recommends a number of principles from a UE standpoint.

Discussion and conclusion:

Not Handled

TD S2-165684 (P-CR) Interim Agreements - Network Slicing. (Source: Sprint, KDDI, ZTE, InterDigital, Telecom Italia, ETRI).
Abstract: Add interim agreements on KI#1 Network Slicing.

Discussion and conclusion:

Not Handled.

TD S2-165659 (P-CR) update of interim agreements on network slicing solution aspects. (Source: China Mobile).
Abstract: this proposal aims to update interim Agreements on network slicing solution aspects.

Discussion and conclusion:

Not Handled.

TD S2-165641 (P-CR) Slice ID usage and clarification. (Source: Huawei, HiSilicon).
Abstract: This contribution discusses the usage of Slice ID among solutions for Key Issue #1, and proposes some common understandings related to Slice ID.

Discussion and conclusion:

Not Handled.

TD S2-165690 (P-CR) Update of interim agreements on network slicing. (Source: Ericsson).
Abstract: Proposes some updates of the interim agreements for network slicing.

Discussion and conclusion:

Not Handled.

TD S2-165570 (P-CR) Recommendations to address Network Slicing Solutions design differences. (Source: ETRI, ZTE Corporation).
Abstract: This paper analyses the fundamental differences among the Network Slicing solutions in clause 6.1 and proposes recommendations and a way forward to converge on those key aspects.

Discussion and conclusion:

LATE DOC: Rx 11/10, 19:40. Not Handled.

TD S2-165756 (P-CR) Interim Agreements for network slicing. (Source: Huawei, HiSilicon).
Abstract: This contribution propose the interim agreements for KI_1 slicing,

Discussion and conclusion:

Not Handled.

TD S2-165572 (P-CR) Interim conclusions on Network Slicing. (Source: Intel).
Abstract: This Paper proposes Interim conclusions on Key Issue#1: Network Slicing.

Discussion and conclusion:

Not Handled.

TD S2-165624 (P-CR) PDU session identification over Multiple Slice. (Source: LG Electronics).
Abstract: This contribution proposes a method for PDU Session identification when UE simultaneously connected to Multiple Network Slice Instances.

Discussion and conclusion:

Not Handled.

TD S2-166098 (P-CR) Interim agreement: Determination of NSSAI based on UE policy (revision of TD S2-165802). (Source: Motorola Mobility, Lenovo).
Abstract: Proposes Interim agreement: Determination of NSSAI based on UE policy.

Discussion and conclusion:

This was withdrawn (not provided)

TD S2-165834 (P-CR) Interim agreements on network slicing. (Source: Samsung).
Abstract: This paper proposes to update Interim Agreements on Network Slicing wrt roaming aspects.

Discussion and conclusion:

Not Handled.

TD S2-165842 (P-CR) The Granularity of Network Slicing. (Source: CATT). (Revision of TD S2-164572).
Abstract: This contribution analyzes the requirement of network slicing as well as existing solution, then proposes interim agreements on the granularity of network slicing.

Discussion and conclusion:

Not Handled.

TD S2-165879 (P-CR) Possible RAN use cases for slicing and other RAN impacts for RAN coordination. (Source: Nokia).
Abstract: This contribution documents possible RAN part of network slice use cases and this could form the basis of a LS to RAN WGs so we start coordination with them.

Discussion and conclusion:

Not Handled.

TD S2-165725 (P-CR) Update of Network Slicing definitions. (Source: NTT DOCOMO, NEC).
Abstract: This contribution proposes an update to the network slice related definitions.

Discussion and conclusion:

Not Handled.

TD S2-165654 (P-CR) Evaluation of roaming solution in 6.1.1. (Source: Huawei, HiSilicon, CATR).
Abstract: This paper proposes evaluation for roaming solution in 6.1.1.

Discussion and conclusion:

Not Handled.

TD S2-165617 (P-CR) Evaluation on solution 1.3. (Source: LG Electronics Inc).
Abstract: This contribution proposes to evaluate the existing solution 1.3 on network slicing.

Discussion and conclusion:

Not Handled.

TD S2-165618 (P-CR) Evaluation on solution 1.9. (Source: LG Electronics Inc).
Abstract: This contribution proposes to evaluate solution 1.9 proposing group A slicing architecture in Annex D.

Discussion and conclusion:

Not Handled.

TD S2-165619 (P-CR) Evaluation on solution 1.11. (Source: LG Electronics Inc).
Abstract: This contribution proposes to evaluate solution 1.11 proposing group A slicing architecture in Annex D.

Discussion and conclusion:

Not Handled.

TD S2-165580 (P-CR) Update to Solution 6.1.2 for Network Slicing. (Source: InterDigital, ZTE, Telecom Italia).
Abstract: Updates solution 6.1.2 to enable CCNF redirection at attach.

Discussion and conclusion:

Not Handled.

TD S2-165851 (P-CR) Update on solution 1.2: Configuration of MDD in the UE for 3rd Party NW Slice. (Source: Samsung).
Abstract: This contribution extends configuration of MDD in the UE for 3rd party NW slice.

Discussion and conclusion:

Not Handled.

TD S2-165853 (P-CR) Update on solution 1.2: Extending the Slice Type components of an MDD vector. (Source: Samsung).
Abstract: This contribution extends the slice type components of an MDD vector.

Discussion and conclusion:

Not Handled.

TD S2-165754 (P-CR) Home-routed PDU Session Request Procedure in roaming Network slicing support. (Source: Samsung).
Abstract: This paper proposes to add the PDU session establishment procedure which is for home-routed traffic. In addition, the initial attach procedure and PDU session establishment procedure in non-roaming are corrected.

Discussion and conclusion:

Not Handled.

TD S2-165691 (P-CR) Update of Network slicing solution. (Source: Ericsson).
Abstract: Updates to solution 1.3 for network slicing.

Discussion and conclusion:

Not Handled.

TD S2-165724 (P-CR) Update of Network Slicing Solution 1.3. (Source: NTT DOCOMO).
Abstract: This contribution proposes an update to the solution 1.3 for support of multiple connections to multiple network slices.

Discussion and conclusion:

Not Handled.

TD S2-165897 (P-CR) Update to 6.1.3.2 Function description. (Source: ITRI).
Abstract: Proposal 1: If a UE provides DCN-ID not supported (i.e., un-supported DCN-ID) in the RAN, RAN can forward un-supported DCN-ID to CCPSF in default CCPF and then goes to Step 2. Proposal 2: If a UE provides an invalid temporary UE identity, RAN can forward this invalid temporary UE identity to CCPSF in default CCPF and then goes to Step 2.

Discussion and conclusion:

Not Handled.

TD S2-165898 (P-CR) Update to Solution 6.1.3: Reselection in Common Control Plane Function. (Source: ITRI).
Abstract: Proposal 1: A serving CCPF can trigger the reselection of a CCPF for a UE according to the information from RAN (e.g., handover, roaming) or based on network policy (e.g., congestion control, load balancing, etc.). Proposal 2: CCPSF in serving CCPF and CCPSF in targeting CCPF may exchange any required information (e.g., DCN-ID, Service type, DNN, etc.) in order to support UE in CCPF reselection.

Discussion and conclusion:

Not Handled.

TD S2-165797 (P-CR) Update to solution 6.1.3. (Source: CATT).
Abstract: This paper proposes to update solution 6.1.3 to include one more case.

Discussion and conclusion:

Not Handled.

TD S2-165660 (P-CR) clarification of network slice ID in solution 1.6. (Source: China Mobile).
Abstract: This contribution aims to clarify the definition of network slice ID in solution 1.6.

Discussion and conclusion:

Not Handled.

TD S2-165615 (P-CR) Clarification and evaluation on Solution 1.8. (Source: LG Electronics Inc).
Abstract: This contribution proposes to clarify some functionalities in the existing solution 1.8 and evaluate the solution.

Discussion and conclusion:

Not Handled.

TD S2-165826 (P-CR) Network slice roaming support. (Source: Samsung).
Abstract: This paper proposes an initial attach procedure in roaming. The proposed procedure is applicable to both of home routed and local breakout roaming scenarios.

Discussion and conclusion:

Not Handled.

TD S2-165910 (DISCUSSION) Defining the LI Function for Network Slicing Solutions. (Source: OTD).
Abstract: This discussion paper defines the Lawful Interception Function and its general requirements for use with Network Slicing solutions.

Discussion and conclusion:

LATE REQ. LATE DOC: Rx: 16/10, 11:50. Not Handled.

TD S2-166079 (LS IN) LS from NGMN Alliance Project P1: NGMN Paper on Edge Computing. (NGMN Alliance Project P1).
Abstract: Intention of the LS and required actions Since June 2016 the NGMN Requirements and Architecture (P1) WS1 E2E Architecture group has been compiling a paper on Edge Computing. The paper identifies use cases from the NGMN 5G White Paper and the SA WG1 SMARTER TR that could be satisfied by implementing Edge Computing as part of the solution. A small number of new use cases identified during the work were also added. NGMN kindly requests SA WG2 to consider the attached paper and to view it as an input to your ongoing study defining the probable architectural requirements for 5G.

Discussion and conclusion:

LATE DOC: Rx 18/10, 08:00. Not Handled. Postponed to meeting #118.

6.10.2 Updates and solutions for key issue 2: QoS framework

This agenda item was convened by Puneet Jain (Intel).

Overall Agreements

TD S2-165788 (P-CR) Way forward proposal to progress the work on QoS. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Way forward proposal to progress the work on QoS.

Discussion and conclusion:

This is a way forward proposal and not a P-CR. It was agreed to take this as a reference when looking at other contributions at this meeting. This was then noted in parallel session.

TD S2-165782 (P-CR) Some QoS features - Way forward proposal. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: The contribution proposes way forward for some specific features of QoS Solutions.

Discussion and conclusion:

Noted in parallel session.

TD S2-165835 (DISCUSSION) Way forward on NextGen QoS Framework. (Source: Intel).
Abstract: Proposes how to close a set of open issues.

Discussion and conclusion:

There was some discussion on this and the associated proposed P-CR in TD S2-165836 was reviewed. This was then noted.

TD S2-165836 (P-CR) Update to interim agreements for QoS framework. (Source: Intel).
Abstract: proposes updates to the interim agreements for QoS framework based on discussion in S2-165835.

Discussion and conclusion:

There were a number of issues raised and clarifications requested and this was left for further off-line discussion and revised in TD S2-165967. Revised in parallel session to TD S2-166000. Revised in parallel session to TD S2-166184. There were some issues raised and this was further discussed off-line and revised in TD S2-166271. e-mail revision 4 approved. Revised to TD S2-166293. Approved.

TD S2-165776 (P-CR) Interim agreements for QoS framework. (Source: Nokia, Alcatel-Lucent Shanghai Bell, AT&T).
Abstract: The contribution proposes updates to the interim agreements for QoS framework.

Discussion and conclusion:

There were a number of issues raised and clarifications requested and this was left for further off-line discussion and revised, merging TD S2-165765 and TD S2-165649, in TD S2-165968. Revised in parallel session to TD S2-166185. This was reviewed and approved.

Interim Agreements specific to reflective QoS

TD S2-165539 (P-CR) Interim Agreement on Reflective QoS. (Source: Ericsson).
Abstract: This contribution aims to discuss the different options for implementing Reflective QoS and includes clarification of the current interim agreement for Reflective QoS.

Discussion and conclusion:

There were a number of issues raised and clarifications requested and this was left for further off-line discussion and revised in TD S2-165969. Revised in parallel session to TD S2-166186 which was reviewed and approved.

TD S2-165648 (P-CR) Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos. (Source: Huawei, HiSilicon).
Abstract: This contribution is to address a Reflective QoS problem in the TR 23.799.

Discussion and conclusion:

There were a number of issues raised and clarifications requested and this was left for further off-line discussion and revised in TD S2-165970. Revised in parallel session to TD S2-166187. Intel commented that off-line discussions decided to convert this to a signal versus non-signal statement. It was suggested to convert the GBR statement to an editor's note. This was further discussed off-line and revised in TD S2-166272. This was left for e-mail approval. e-mail revision 1 approved. Revised to TD S2-166294. Approved.

TD S2-165653 (P-CR) Update to Interim agreements on QoS framework - Reflective QoS. (Source: China Mobile).
Abstract: Updates to interim agreements for Key Issue #2 (QoS framework)and proposes that Reflective QoS indication is signalled inband.

Discussion and conclusion:

Suggested to merge with TD S2-165800 into TD S2-165971. It was reported that the merge was unsuccessful, so this was revised in parallel session to TD S2-165995. Noted in parallel session.

TD S2-165800 (P-CR) Interim agreement on reflective QoS. (Source: LG Electronics).
Abstract: This contribution proposes an interim agreement on key issue 2 - QoS Framework especially on reflective QoS.

Discussion and conclusion:

There were a number of issues raised and clarifications requested and this was left for further off-line discussion and revised, merging TD S2-165653, in TD S2-165971. Noted in parallel session.

Additional Agreements

TD S2-165763 (P-CR) Additional interim agreements for QoS flow classification. (Source: Qualcomm Inc).
Abstract: the paper proposes a way forward and interim agreements for flow classification and packet differentiation.

Discussion and conclusion:

Revised in parallel session to TD S2-165996. This was withdrawn (not provided).

TD S2-165764 (P-CR) Additional interim agreements for QoS establishment. (Source: Qualcomm Inc).
Abstract: the paper proposes a way forward and interim agreements on QoS establishment mechanisms.

Discussion and conclusion:

Revised in parallel session to TD S2-165997. Revised in parallel session to TD S2-166188. Agreed in parallel session. This was block approved.

TD S2-165765 (P-CR) Additional interim agreement for QoS on DNN-AMBR. (Source: Qualcomm Inc).
Abstract: the paper proposes a new interim agreement on QoS parameters.

Discussion and conclusion:

Merged in parallel session with TD S2-165776 into TD S2-165968.

TD S2-165806 (P-CR) AMBR enforcement. (Source: ZTE Corporation).
Abstract: This contribution proposes solution on the AMBR enforcement for multi-homed session model.

Discussion and conclusion:

Revised in parallel session to TD S2-165998. Revised in parallel session to TD S2-166189. Corrections were made and this was revised in TD S2-166269. This was left for e-mail approval. e-mail approved.

TD S2-165649 (P-CR) Update Interim Agreements on Key Issue #2 QoS. (Source: Huawei, HiSilicon).
Abstract: This contribution is to Update Interim Agreements on Key Issue #2 QoS in the TR 23.799.

Discussion and conclusion:

Merged in parallel session with TD S2-165776 into TD S2-165968.

TD S2-165837 [DRAFT] LS on NextGen QoS interim agreements. (Intel)
Abstract: proposes to inform RAN WGs on the SA WG2 progress on NextGen QoS framework.

Discussion and conclusion:

Revised in parallel session to TD S2-165999. Revised in parallel session to TD S2-166190. This was left for e-mail approval. e-mail revision 1 approved. Revised in TD S2-166289. Approved.

Solution Evaluation

TD S2-165846 (P-CR) Reviewing the benefit of Flow based QoS. (Source: NTT DOCOMO).
Abstract: This paper discusses and reviews the benefit and motivation of Flow based QoS architecture looking from overall system perspective taking into account the agreements achieved in SA WG2 and RAN WG2.

Discussion and conclusion:

Noted in parallel session.

TD S2-165847 (P-CR) Additional interim agreements for Key Issues 2 and 4. (Source: NTT DOCOMO).
Abstract: Interim agreements in 8.3 and 8.5.

Discussion and conclusion:

This was briefly reviewed under the 6.10.4 session for reference information. Noted in parallel session.

TD S2-165843 (P-CR) Evaluation of solution 6.2.2. (Source: NTT DOCOMO).
Abstract: This contribution proposes additional evaluation of Solution 6.2.2. Furthermore, it clarifies that the NG2 interface must be used to make the RAN aware of the pre-authorised list of FPIs.

Discussion and conclusion:

Not Handled.

Updates to solutions

TD S2-165538 (P-CR) QoS: Clarifications and updates of solution 2.1. (Source: Ericsson).
Abstract: This contribution aims to clarify solution 2.1 in line with the current interim agreements and to further develop the solution evaluation section.

Discussion and conclusion:

Not Handled.

TD S2-165686 (P-CR) Input to solution 5 for KI 2 on Dynamic QoS. (Source: Ericsson).
Abstract: This contribution provides additional input to the solution on Dynamic QoS for Key Issue 2.

Discussion and conclusion:

Not Handled.

TD S2-165808 (P-CR) Clarification on UE AMBR when MM and SM are split. (Source: ZTE Corporation).
Abstract: It is proposed to agree that UE-AMBR is per slice and the SMF sends the calculated UE-AMBR to RAN.

Discussion and conclusion:

Not Handled.

TD S2-165856 (P-CR) Update to 6.2.4 : clarification and solution evaluation. (Source: Samsung).
Abstract: Clarification and solution evaluation of solution 6.2.4.

Discussion and conclusion:

Not Handled.

TD S2-165872 (P-CR) RAN triggered FPI change. (Source: CATT).
Abstract: It is proposed to update the solution 2.2 to include RAN triggered FPI change.

Discussion and conclusion:

Not Handled.

6.10.3 Updates and solutions for key issue 3: Mobility Management framework

TD S2-165785 (DISCUSSION) Way forward proposal to progress the work on MM. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Way forward proposal to progress the work on MM.

Discussion and conclusion:

This was left for off-line review and update and revised in TD S2-166080. This was withdrawn (not provided).

TD S2-165528 (P-CR) Interim agreements on Reachability. (Source: Ericsson).
Abstract: Proposal on Reachability on Key issue #3 Interim Agreements.

Discussion and conclusion:

There were a number of comments and clarifications made. Other proposals were then reviewed. This was left for further off-line discussion and revised, merging TD S2-165677, in TD S2-166082. It was commented that periodic update may become a normal update on location change. It was suggested to add an editors note that the UE needs to be registered after a TAU. This was further discussed off-line and revised in TD S2-166220 which was reviewed and approved.

TD S2-165677 (P-CR) Interim agreements to support MO only mode. (Source: Sony).
Abstract: Discussion and comparison of solutions offering power save functionality for UE with extreme power constraints.

Discussion and conclusion:

There were a number of comments and clarifications made. Other proposals were then reviewed. This was merged with TD S2-165528 into TD S2-166082.

TD S2-165830 (P-CR) Update of solution 6.3.6 and interim agreements for power saving. (Source: Huawei, HiSilicon).
Abstract: This paper removes the editor notes in the Solution 6.3.6: Mobility states for UE with power consumption optimization, and update the Interim Agreements on CN/NAS state model.

Discussion and conclusion:

There were a number of comments and clarifications made. This was left for further off-line discussion and revised in TD S2-166081. Further corrections were needed and this was left for further off-line discussion and revised in TD S2-166221. This was withdrawn (not provided).

TD S2-165526 (P-CR) Clarification of Interim Agreements on Mobility on Demand. (Source: Ericsson, MediaTek Inc).
Abstract: Resolves the editor's notes in chapter 8.4 Interim Agreements on Mobility on Demand.

Discussion and conclusion:

There were a number of comments and clarifications made. This was left for further off-line discussion and revised in TD S2-166083. It was suggested to add an editors note whether allowed area relates to registration area. This was further revised off-line in TD S2-166222 which was reviewed and approved.

TD S2-165761 (P-CR) Separation of Mobility levels and Mobility restrictions. (Source: Sony, Ericsson, MediaTek Inc, Qualcomm Incorporated).
Abstract: The mobility levels (used to solve the mobility on demand) concept is separated into mobility patterns and mobility restrictions. The mobility pattern aspects are handled in a separate paper.

Discussion and conclusion:

There were a number of comments and clarifications made. This was left for further off-line discussion and revised in TD S2-166084 which was reviewed and agreed in parallel session. This was block approved.

TD S2-165791 (P-CR) Update to interim agreements regarding MM. (Source: CATT, CATR).
Abstract: This paper proposes some agreements about mobility management.

Discussion and conclusion:

There were a number of comments and clarifications made. Other proposals were then reviewed. All proposals were discussed off-line and acceptable parts merged into a consolidated proposal in TD S2-166085.

TD S2-165533 (P-CR) Interim Agreements on Mobility Pattern. (Source: Ericsson, MediaTek Inc., Sony).
Abstract: Proposal on Interim Agreements on Mobility Pattern.

Discussion and conclusion:

There were a number of comments and clarifications made. Other proposals were then reviewed. All proposals were discussed off-line and acceptable parts merged into a consolidated proposal in TD S2-166085.

TD S2-165720 (P-CR) Clarifications and proposed way forward on Mobility Management Parameters - Key issue #3. (Source: Qualcomm Incorporated, MediaTek Inc).
Abstract: Provides some clarification and proposes a way forward on Mobility Management Parameters definitions.

Discussion and conclusion:

There were a number of comments and clarifications made. Other proposals were then reviewed. All proposals were discussed off-line and acceptable parts merged into a consolidated proposal in TD S2-166085. This was further discussed off-line and revised, merging TD S2-165622, in TD S2-166116. Ericsson suggested some clarifications and this was revised off-line in TD S2-166223 which was reviewed and approved.

TD S2-165829 (P-CR) Update of interim agreements on mobility on demand. (Source: Huawei, HiSilicon).
Abstract: This paper proposes to include the mobility pattern based mobility management in the interim agreements on mobility on demand.

Discussion and conclusion:

There were a number of comments and clarifications made. Other proposals were then reviewed. All proposals were discussed off-line and acceptable parts merged into a consolidated proposal in TD S2-166085.

TD S2-165863 (P-CR) Proposed MMF evaluation criteria and MMF conclusions. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Proposed evaluation criteria for MMF candidate solutions and proposed update of conclusions clause in the MMF area.

Discussion and conclusion:

There were a number of comments and clarifications made. All proposals were discussed off-line and acceptable parts merged into a consolidated proposal in TD S2-166085.

TD S2-165532 (P-CR) Interim Agreements on Mobility Restriction. (Source: Ericsson).
Abstract: Proposal on Interim Agreements on Mobility Restriction.

Discussion and conclusion:

Nokia commented that they agreed that mobility level definitions were needed, but preferred to describe them in terms of UE behaviour. There were some issues raised and it was decided to include this as a subscription parameter. This was further discussed off-line and merged into TD S2-166085.

TD S2-165804 (P-CR) Interim Agreements on Mobility Management Behaviours. (Source: Samsung).
Abstract: This contribution proposes interim agreements on idle mode mobility management behaviours that can be negotiated between UE and MM.

Discussion and conclusion:

This was merged into TD S2-166085.

TD S2-165678 (P-CR) Interim agreements based on solution 6.3.11 and 6.3.21. (Source: Sony).
Abstract: Comparing solution 3.11 and 3.21 and proposes addition to the interim agreement clause 8.4 Mobility on Demand.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and merged into TD S2-166085.

TD S2-166085 (P-CR) Consolidated proposal on interim agreements on mobility pattern.
Abstract: Proposal on Interim agreements related to Mobility patterns.

Discussion and conclusion:

Created in off-line drafting. Qualcomm asked for clarifications of bullet 7 on how this is used by the core network to optimise mobility and to describe that assistance information can be provided to the RAN. MediaTek suggested removing bullet 6C. These were examples and the bullet should be clarified to indicate this. This was further discussed off-line and revised in TD S2-166236 which was reviewed. Further corrections were needed and this was revised off-line in TD S2-166275. This was left for e-mail approval. e-mail revision 1 approved. Revised to TD S2-166295. Approved.

TD S2-165622 (P-CR) Interim agreement on mobility management parameters. (Source: LG Electronics).
Abstract: This paper analysed the proposed solutions which are related mobility management parameters to saving CN/RAN resources and also UE power consumption in regard to different UE service requests. Consequently, the interim agreement is proposed for mobility management parameters to control efficient UE's mobility.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and merged with TD S2-165720 into TD S2-166116.

TD S2-165621 (P-CR) Interim agreement on paging area management. (Source: LG Electronics).
Abstract: This paper proposes interim agreement on paging area management for NG system.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166117. CATT asked for clarification of '(if necessary)' in bullet 3. This was further discussed off-line and revised in TD S2-166224 which was reviewed. Further corrections were needed and this was revised off-line in TD S2-166276. This was left for e-mail approval. e-mail revision 1 approved. Revised to TD S2-166296. Approved.

TD S2-165825 (P-CR) Way Forward on UE Reachability management. (Source: CATT).
Abstract: This paper propose Way Forwards on UE reachablity management.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166119. There was some discussion the interim agreements proposal. Qualcomm suggested that bullet 2 is not related to MM and suggested a clarification and removal of '*(e.g. P-TAU paging)*' in bullet 3. Other issues were raised and this was left for further off-line discussion and revised in TD S2-166225 which was reviewed. Further corrections were needed and this was revised off-line in TD S2-166277. This was left for e-mail approval. e-mail revision 1 approved. Revised to TD S2-166297. Approved.

TD S2-165814 (P-CR) Updated Solution 3.10 for CN Assisted Paging Retry. (Source: ETRI).
Abstract: This contribution proposes to update Solution 3.10 by adding CN assisted paging retry mechanism after RAN specific paging failure.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166120. Further issues were raised and this was left for further off-line discussion and revised in TD S2-166226 which was reviewed and approved.

TD S2-165688 (P-CR) UE Reachability management in Inactive mode. (Source: Ericsson).
Abstract: UE Reachability management in Inactive mode.

Discussion and conclusion:

There were some issues raised and clarifications requested and this was left for further off-line discussion and revised in TD S2-166121. Further corrections were requested and revision marks should be shown. This was further revised off-line in TD S2-166227 which was reviewed and approved.

TD S2-165627 (P-CR) Solution evaluation 6.3.12 'Solution for UE Reachability in power saving state'. (Source: LG Electronics).
Abstract: This is evaluation 6.3.12 'Mobility management solution for UE Reachability in power saving state'.

Discussion and conclusion:

Intel did not agree with the solution evaluation. This was left for further off-line discussion and revised in TD S2-166122 which was reviewed and agreed in parallel session. This was block approved.

TD S2-165697 (P-CR) Update of Dynamic Mobility Management. (Source: Deutsche Telekom, Telecom Italia, BT).
Abstract: This contribution provides an update of the DMM solution as well as an evaluation and recommendation.

Discussion and conclusion:

There was some discussion on the dynamic mobility management solution proposal and some corrections and clarifications were requested. This was left for further off-line discussion and revised in TD S2-166123. This was withdrawn (not provided).

TD S2-165783 (P-CR) Intra-RAT Handover procedure. (Source: CATT, CATR).
Abstract: This paper propose a solution for intra-RAT handover procedure.

Discussion and conclusion:

There were some issues raised and clarifications requested and this was left for further off-line discussion and revised in TD S2-166124 which was reviewed and agreed in parallel session. This was block approved.

TD S2-165862 (P-CR) Addition of lightweight UE Status Update procedure at NG1. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Proposed addition of lightweight procedure for UE Status Update.

Discussion and conclusion:

There were some issues raised and clarifications requested and this was left for further off-line discussion and revised in TD S2-166125 which was reviewed and agreed in parallel session. This was block approved.

TD S2-165839 (P-CR) Multiple level Tracking area management and update the interim agreement on mobility management. (Source: Huawei, HiSilicon, China Mobile, China Unicom, China Telecom, CATR).
Abstract: his paper proposes a new multiple level tracking area management concept for NextGen system for efficient signalling handling in regard to different UE mobility requirement and update the interim agreements on mobility management.

Discussion and conclusion:

This was left for further off-line discussion. Off-line comments were received and this was revised off-line to take issues into account in TD S2-166228 which was reviewed. The evaluations should be removed. This was revised accordingly in TD S2-166278 which was approved.

TD S2-165687 (P-CR) Input on RAN Paging and functional division. (Source: Ericsson).
Abstract: This contribution provides further analysis and input on RAN Paging and functional division. In addition to 6.10.3, this document also applies to agenda 6.10.8.

Discussion and conclusion:

Not Handled.

TD S2-165628 (P-CR) Solution evaluation '6.3.8: Simplified mobility states for stationary UE and MO data transmission only UE'. (Source: LG Electronics).
Abstract: At SA WG2#116bis meeting, interim agreement on MM that only single MM states should be specified. Therefore it is proposed that no alternative mobility states is required for specific UE type such as stationary UE and MO data transmission only UE.

Discussion and conclusion:

Not Handled.

TD S2-165527 (P-CR) Alignment of solution 3.9. (Source: Ericsson).
Abstract: Alignment of solution 3.9 to proposed update of 'Interim Agreement on Mobility on Demand', see contribution 'Clarification of Interim Agreements on Mobility on Demand'.

Discussion and conclusion:

Not Handled.

TD S2-165790 (P-CR) Discussion on mobility on demand. (Source: CATT, CATR).
Abstract: This contribution aims to discuss how to progress mobility on demand topic, and puts forward some proposals.

Discussion and conclusion:

Not Handled.

TD S2-165623 (P-CR) Solution update & evaluation 6.3.16 Limited & Unlimited UE mobility level. (Source: LG Electronics).
Abstract: This is solution evaluation and also solution update to resolve editor's note for roaming case.

Discussion and conclusion:

Not Handled.

TD S2-165529 (P-CR) Clarifications of Mobility procedure. (Source: Ericsson).
Abstract: Resolves the editor's notes in solution 3.18 Mobility procedure.

Discussion and conclusion:

Not Handled.

TD S2-165732 (P-CR) Update the solution 6.3.19. (Source: Huawei, HiSilicon).
Abstract: This contribution provide detailed call flow for usage of RRC inactive connected mode defined in clause 6.3.19.

Discussion and conclusion:

Not Handled.

TD S2-165795 (P-CR) An alternative to Activate RRC_inactive_connected state. (Source: CATT).
Abstract: This paper aims to introduce another option of activating RRC inactive state into solution 6.3.19.

Discussion and conclusion:

Not Handled.

TD S2-165530 (P-CR) Clarification of Solution 3.20. (Source: Ericsson).
Abstract: Resolves the editor's notes in solution 3.20.

Discussion and conclusion:

Not Handled.

TD S2-165620 (P-CR) Solution update & evaluation 6.3.23 Two layers Tracking Area handling. (Source: LG Electronics, SK Telecom).
Abstract: This is evaluation paper on solution 'Two layers Tracking Area Handling'.

Discussion and conclusion:

Not Handled.

TD S2-165629 (P-CR) New solution on 'Mobility framework for non-3GPP access'. (Source: LG Electronics).
Abstract: This paper is resubmission which is not handled at SA WG2#116bis meeting. This paper proposes mobility management framework for non-3GPP access which addresses MM WT#1 and WT#8.

Discussion and conclusion:

Not Handled.

TD S2-165828 (P-CR) Update of Solution 6.3.24 Mobility pattern based mobility management. (Source: Huawei, HiSilicon).
Abstract: This paper removes the editor notes regarding mobility pattern definition and mobility pattern update procedure in the Solution 6.3.24.

Discussion and conclusion:

Not Handled.

TD S2-165695 (P-CR) New Solution: UE-driven mobility handling during active sessions. (Source: Deutsche Telekom, Telecom Italia, SK Telecom).
Abstract: This contribution proposes to add a new solution for Mobility states including more UE autonomy during active sessions.

Discussion and conclusion:

Not Handled.

TD S2-165779 (P-CR) Connected mode MM for multiple parallel sessions. (Source: NTT DOCOMO).
Abstract: New handover procedure for the case of multiple parallel PDU sessions with different UP-GWs.

Discussion and conclusion:

Not Handled.

TD S2-165781 (P-CR) Enhanced X2-based handover with multiple parallel PDN connections. (Source: NTT DOCOMO).
Abstract: Enhanced X2 based handover when a UE is connected to multiple SGWs simultaneously.

Discussion and conclusion:

Not Handled.

TD S2-165784 (P-CR) TUPF relocation during the HO procedure. (Source: CATT).
Abstract: It is proposed to capture a new solution in TR 23.799.

Discussion and conclusion:

Not Handled.

TD S2-165803 (P-CR) NG3-based Handover procedure. (Source: Samsung).
Abstract: This contribution proposes a solution for key issue 3: Mobility Management Framework especially for MM_WT_#4: Connected mode mobility and assignment of CP and UP network functions (as needed) and a related MM procedure.

Discussion and conclusion:

Not Handled.

6.10.4 Updates and solutions for key issue 4: Session management

TD S2-165559 (P-CR) PDU Session IP version handling. (Source: Ericsson).
Abstract: This contribution discusses PDU session types for IP.

Discussion and conclusion:

There was some discussion and issues raised and this was left for further off-line discussion and revised in TD S2-166049. Some further issues were raised with the use of Dual stack and this was left for further off-line discussion and revised in TD S2-166240 which was reviewed. Further corrections were needed and this was revised in TD S2-166279 which was approved.

TD S2-165588 (P-CR) Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities). (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Signalling layer integrity between MM and SM entities and Interim agreement for MMF-SMF split: The split between MMF and SMF is done according to the principles described in solution 6.4.16.

Discussion and conclusion:

There was some discussion and further work was required to clarify the proposal. This was left for further off-line discussion and revised in TD S2-166052 which was reviewed. Further corrections were needed and this was left for further off-line discussion and revised in TD S2-166280. This was left for e-mail approval. e-mail revision 5 approved. Revised to TD S2-166298. Approved.

TD S2-165693 (P-CR) Update to Interim Agreements on MM and SM interaction. (Source: Deutsche Telekom AG).
Abstract: This contribution proposes an update to Interim Agreements on MM and SM interaction a.o. such to reflect consistency on other preliminary agreements.

Discussion and conclusion:

There was some discussion and issues raised and the key questions in this will be considered for the overall list of questions for decision. This was then noted.

TD S2-165642 (P-CR) SM and MM decoupling. (Source: Huawei, HiSilicon).
Abstract: This contribution discusses the potential issues and impact to support the SM and MM separation. Based on that analysis one conclusion is proposed.

Discussion and conclusion:

Response contribution in TD S2-165911. This was discussed and issues raised and the key questions in this will be considered for the overall list of questions for decision. This was then noted.

TD S2-165911 (DISCUSSION) Reply / answer to TD S2-165642: SM and MM decoupling. (Source: Nokia).
Abstract: A Reply / answer to TD S2-165642 (Discussion on SM and MM).

Discussion and conclusion:

LATE REQ. LATE DOC: Rx 17/10, 08:20. Not Handled.

TD S2-165596 (P-CR) Evaluation on subscription information access in MM-SM split architecture. (Source: LG Electronics).
Abstract: This paper proposes to consider the evaluation on subscription information access in MM-SM split architecture.

Discussion and conclusion:

There was some discussion and further work was required to clarify the proposal. This was left for further off-line discussion and revised, merging TD S2-165589, in TD S2-166053 which was reviewed and agreed in parallel session. This was block approved.

TD S2-165557 (P-CR) Solution updates to MM-SM split. (Source: Ericsson).
Abstract: This contribution proposes solution updates to MM-SM split and proposes to narrow down the number of options.

Discussion and conclusion:

There was some discussion and further work was required to clarify the proposal. This was left for further off-line discussion and revised in TD S2-166054 which was reviewed and agreed in parallel session. This was block approved.

TD S2-165589 (P-CR) MM-SM split: SMF access to subscription data. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: MM-SM split: SMF access to subscription data.

Discussion and conclusion:

This was discussed and merged with TD S2-165596 into TD S2-166053.

TD S2-165749 (P-CR) Interim agreement on infrequent small data transmission transferring NextGen system. (Source: LG Electronics).
Abstract: This paper proposes an interim agreement on infrequent small data transmission.

Discussion and conclusion:

Not Handled.

TD S2-165656 (P-CR) Update of Solution 6.4.19 with evaluation and update interim agreement. (Source: Huawei, HiSilicon, CATR).
Abstract: This paper proposes evaluation and update of small data solution 6.4.19, and update interim agreement of KI 4#.

Discussion and conclusion:

Not Handled.

TD S2-165676 (P-CR) Interim agreement to use UP for small data transfer. (Source: Sony, Ericsson).
Abstract: Discusses and proposes that the NextGen system shall support efficient user data transfer of small data in the User Plane.

Discussion and conclusion:

Not Handled.

TD S2-165831 (P-CR) Interim agreement on the infrequent small data transferring. (Source: Huawei, HiSilicon).
Abstract: This contribution propose the interim agreement for the infrequent small data transfering.

Discussion and conclusion:

Not Handled.

TD S2-165594 (P-CR) Principle and Interim agreements on non-3GPP access aspects. (Source: LG Electronics).
Abstract: This paper proposes to consider non-3GPP access aspects.

Discussion and conclusion:

Nokia commented that more work is needed on this before agreeing it for inclusion in the TR. This was then postponed.

TD S2-165682 (P-CR) Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24). (Source: Huawei).
Abstract: This contribution proposes introduction of definitions for UE with PDU session on different accesses simultaneously and for the same PDU session on multi-accesses. Furthermore it proposed a clarification on the interim agreement for considering multi-Access PDU session in phase 2.

Discussion and conclusion:

There were a number of issues raised and this was further discussed off-line and revised , merging TD S2-165881, in TD S2-166108. Further clarifications were needed and this was revised off-line in TD S2-166241. Revised off-line in TD S2-166260. This was left for e-mail approval. e-mail revision 5 approved. Revised to TD S2-166291. Approved.

TD S2-165646 (P-CR) Update the Interim agreement on session management and the solution 4.23. (Source: Huawei, HiSilicon).
Abstract: This paper proposes to update the solution 4.23 and also proposes an interim agreement for KI_4.

Discussion and conclusion:

There were some issues raised and it was considered necessary to study the solution part further before agreeing this. This was then postponed.

TD S2-165560 (P-CR) Interim conclusions on user plane format. (Source: Ericsson).
Abstract: This contribution proposes resolutions to editor's notes in the interim agreements for user plane format.

Discussion and conclusion:

There were some issues raised and other proposals were then reviewed. This was left for further off-line discussion and revised in TD S2-166111. Huawei should be removed from the source companies and this was revised accordingly in TD S2-166242 which was Agreed in parallel session. This was block approved.

TD S2-165655 (P-CR) Updates of per node-level tunnel model and interim agreement. (Source: Huawei, HiSilicon, China Mobile, CATR).
Abstract: This paper proposes evaluation and update of per-node tunnel solution, and update interim agreement of KI 4#.

Discussion and conclusion:

There were some issues raised and other proposals were then reviewed. This was further discussed off-line and revised, merging TD S2-165507 and TD S2-165751, in TD S2-166110. This was withdrawn.

TD S2-165718 (P-CR) Updated interim agreements on session management. (Source: NEC, NTT DOCOMO).
Abstract: It is proposed to include an interim agreement about the independent activation/deactivation of user plane connection per PDU session.

Discussion and conclusion:

There were some issues raised this was left for further off-line discussion and revised in TD S2-166109 which was reviewed. UE-AN should be changed to UE-CN. This was revised accordingly in TD S2-166281 which was approved.

TD S2-165507 (P-CR) update and evaluation of Solution 4.11 (work task1). (Source: KDDI, ETRI, China Mobile, KPN).
Abstract: This document proposes an alternative procedure for Per Node-level Tunnel in Section 6.4.11. In SA WG2 116bis, the procedure for Per Node-level Tunnel is approved. However, that does not follow the interim agreement on MM and SM interaction (The single NG1 termination point is located in MM, and the MM selects the SM functions for the PDU sessions). This document proposes the procedure based on the interim agreement on MM and SM interaction. The network determines whether Node-level tunnel applies based on the information provided by the UE.

Discussion and conclusion:

There were some issues raised and this further discussed off-line and merged with TD S2-165655 into TD S2-166110.

TD S2-165751 (P-CR) Solution update of UP protocol model - Per Node-level Tunnel. (Source: LG Electronics).
Abstract: This paper proposes an update of the solution to support Ethernet type PDU.

Discussion and conclusion:

This was merged off-line with TD S2-165655 into TD S2-166110.

TD S2-165586 (P-CR) Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed). (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed).

Discussion and conclusion:

There were a number of issues raised and this was left for further off-line discussion and revised in TD S2-166112. It was agreed to add an editors note and clarify other aspects and this was further discussed off-line and revised in TD S2-166243 which was reviewed and approved.

TD S2-165890 (P-CR) Interim Agreements of Key Issue 4. (Source: Huawei, HiSilicon).
Abstract: this contribution proposes interim agreements to key issue 4.

Discussion and conclusion:

This was discussed and it was decided to postpone the issue.

TD S2-165766 (P-CR) Way forward on Key Issue 4 on Session Management for WT1 and WT2. (Source: Qualcomm Inc).
Abstract: The paper addresses Key Issue #4, and specifically work task 1 on 'Baseline session set up / baseline model' and work task 2 on 'MM/SM).' The contribution proposes a way forward.

Discussion and conclusion:

Only the proposed bullets 3, 7 and 8 to clause 8.4 were considered at this time. A number of issues were raised and clarifications requested and this was left for further off-line discussion and revised in TD S2-166113. Intel suggested adding '*terminating NG6*' to bullet 3. Other clarifications were made and this was revised accordingly in TD S2-166245 which was Agreed in parallel session. This was block approved.

TD S2-165585 (P-CR) Interim Agreements on Session Management (Key Issue #4). (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Interim Agreements on Session Management (Key Issue #4).

Discussion and conclusion:

There were some issues raised and clarifications needed and this was left for further off-line discussion and revised in TD S2-166114. It was agreed to remove bullet 4 and the editor's note and change APN to DNN. This was revised accordingly in TD S2-166244 which was Agreed in parallel session. This was block approved.

TD S2-165833 (P-CR) Clarification for SM Selection by MM. (Source: ETRI, ZTE, Samsung).
Abstract: This contribution proposes to clarify the description related to SM selection by MM in interim agreement on MM and SM interaction.

Discussion and conclusion:

Not Handled.

TD S2-165742 (P-CR) Evaluation update of Solution 4.7: Infrequent small data transfer. (Source: LG Electronics).
Abstract: This paper proposes an update of solution evaluation.

Discussion and conclusion:

Not Handled.

TD S2-165745 (P-CR) Evaluation of Solution 4.8: for Data transmission with ConnectionLess RAN-Core interface. (Source: LG Electronics).
Abstract: This paper proposes a solution evaluation.

Discussion and conclusion:

Not Handled.

TD S2-165747 (P-CR) Evaluation of Solution 4.18: Solution for Infrequent Small Data. (Source: LG Electronics).
Abstract: This paper proposes solution evaluation.

Discussion and conclusion:

Not Handled.

TD S2-165748 (P-CR) Solution update and evaluation of Solution 4.19: Infrequent small user data transfer via control plane. (Source: LG Electronics).
Abstract: This paper proposes an update and evaluation of the solution.

Discussion and conclusion:

Not Handled.

TD S2-165558 (P-CR) Updates to solution 6.6.3: Multi-homing over multiple PDU sessions with network-provided routing rules. (Source: Ericsson).
Abstract: This contribution resolves the editor's notes in solution 6.6.3 on.

Discussion and conclusion:

Not Handled.

TD S2-165757 (P-CR) Session management for connectionless transmission. (Source: Huawei, HiSilicon).
Abstract: This contribution provides alternative solutions for connectionless transmission of 6.4.8.

Discussion and conclusion:

Not Handled.

TD S2-165845 (P-CR) Clarifications and evaluation for Per QoS class tunnel protocol model. (Source: NTT DOCOMO).
Abstract: Adds dual connectivity aspects and evaluation to the solution 4.9.

Discussion and conclusion:

Not Handled.

TD S2-165844 (P-CR) Use of DC with Solution 4.10. (Source: NTT DOCOMO).
Abstract: This contribution clarifies the section 6.4.10 that in case of Dual Connectivity two tunnels exist between RAN and CN per PDU session.

Discussion and conclusion:

Not Handled.

TD S2-165587 (P-CR) Update of Solution 4.13: how to choose which of the UP-GW IP anchors visible to the UE is to be used as the most preferred default router. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Update of Solution 4.13: how to choose which of the UP-GW IP anchors visible to the UE is to be used as the most preferred default router.

Discussion and conclusion:

Not Handled.

TD S2-165758 (P-CR) Session management for network based ultra-reliable transmission. (Source: Huawei, HiSilicon).
Abstract: This contribution addresses the key issues on session management and (re)selection of efficient user plane paths for network based ultra-reliable transmission.

Discussion and conclusion:

Not Handled.

TD S2-165733 (P-CR) Update on solution 4.16: the interaction between MM and SM. (Source: Samsung, ETRI).
Abstract: This contribution proposes update on the solution 4.16 for routing initial PDU session request message between MM and SM.

Discussion and conclusion:

Not Handled.

TD S2-165773 (P-CR) Update to Solution 4.16: the interaction between MM and SM. (Source: Samsung).
Abstract: This contribution proposes update to the solution 4.16.

Discussion and conclusion:

Not Handled.

TD S2-165561 (P-CR) Update to Solution 4.18 for Infrequent Small Data. (Source: Ericsson).
Abstract: This contribution proposes to document an update to Solution for Infrequent Small Data.

Discussion and conclusion:

Not Handled.

TD S2-165597 (P-CR) Clarification and evaluation about solution 4.20 (Session Management on the PDU session(s) via different accesses). (Source: LG Electronics).
Abstract: This paper proposes to clarify and evaluate the solution 4.20: Session Management on the PDU session(s) via different accesses.

Discussion and conclusion:

Not Handled.

TD S2-165866 (P-CR) Delete an editor's note in solution 4.21. (Source: CATT).
Abstract: It is proposed to delete an editor's note from solution 4.21.

Discussion and conclusion:

Not Handled.

TD S2-165719 (P-CR) Updates to Solution 4.22. (Source: NEC).
Abstract: It is proposed to update solution 4.22 by clarifying some procedural details and introducing solution evaluation.

Discussion and conclusion:

Not Handled.

TD S2-165730 (P-CR) Update of solution 4.21 and 4.22 relating to paging. (Source: Samsung, ETRI).
Abstract: This contribution proposes update on the solution 4.21 and 4.22 relating to paging.

Discussion and conclusion:

Not Handled.

TD S2-165595 (P-CR) Update of Solution 4.23: Asynchronous Session Management Model. (Source: LG Electronics).
Abstract: This paper proposes to update Solution 4.23: Asynchronous Session Management Model.

Discussion and conclusion:

Not Handled.

TD S2-165598 (P-CR) Clarification and evaluation about solution 4.24 (Session Management with individual CP function per access network). (Source: LG Electronics).
Abstract: This paper proposes to clarify and evaluate the solution 4.24: Session Management with individual CP function per access network.

Discussion and conclusion:

Not Handled.

TD S2-165546 (P-CR) Update to Solution 4.25: Local Area Data Network. (Source: Samsung).
Abstract: Update to Solution 4.25: Local Area Data Network This paper discusses the technical issues captured as 'Editor's Note' for the solution 4.25 and proposes a solution to address the technical issues.

Discussion and conclusion:

Not Handled.

TD S2-165865 (P-CR) Routing of the SM message. (Source: CATT).
Abstract: It is proposed to add a solution related to the routing of the SM message.

Discussion and conclusion:

Not Handled.

6.10.5 Void

This topic was not on the agenda for this meeting.

6.10.6 Updates and solutions for key issue 6: Support for session and service continuity and efficient user plan path

This agenda item was convened by Magnus Olsson (Ericsson).

Voice

TD S2-165486 (DISCUSSION) Considerations on voice support in NGS. (Source: MediaTek Inc).
Abstract: This contribution makes a number of simple proposals for voice continuity considering NGS and EPS to ensure it is not an afterthought of NGS.

Discussion and conclusion:

This was reviewed in the 6.10.6 parallel session and it was decided to forward this to the interworking sessions (see agenda item 6.10.18). This was noted in parallel session.

Interim Agreements

TD S2-165579 (P-CR) Updated Interim Agreements related to selection/reselection of U-plane function. (Source: KDDI, Sprint, China Unicom).
Abstract: This document proposes the updated interim agreement on session management for selection/reselection of UP function.

Discussion and conclusion:

This was reviewed and it was decided to merge this with TD S2-165889 into TD S2-166094.

TD S2-165590 (P-CR) Interim Agreements on Session Management (Key Issue 5 and 6). (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Interim Agreements on Session Management (Key Issue 5 and 6).

Discussion and conclusion:

A number of issues were raised and clarifications requested. This was left for further off-line discussion and revised, merging TD S2-165626, TD S2-165780 and TD S2-165811, in TD S2-166086. Some issues were raised which should be further discussed at the next meeting. Nokia agreed to change a bullet to an editor's note to cover the issue to be revisited. This was further discussed off-line and revised in TD S2-166246 which was reviewed and approved.

TD S2-165626 (P-CR) Interim agreement on Session and Service Continuity. (Source: LG Electronics).
Abstract: This contribution proposes an interim agreement on key issue 6 - Session and Service Continuity and efficient user plane path.

Discussion and conclusion:

This was discussed in parallel session and merged with TD S2-165590 into TD S2-166086.

TD S2-165780 (P-CR) Interim agreement on SSC mode to support Key issue 6. (Source: CATT).
Abstract: Solution 6.1 is proposed to solve service and session continuity. 3 kinds of SSC mode are defined to fulfil different service and session continuity requirements, the principle of SSC mode are also described in subclause 6.6.1.1. Multi-home mechanism can be treated as the solution to solve the establishment of SSC mode 2 and SSC mode 3 PDU sessions. It is proposed to endorse the SSC mode as the baseline to support key issue 6.

Discussion and conclusion:

This was merged in parallel session with TD S2-165590 into TD S2-166086.

TD S2-165799 (P-CR) Interim agreement on how the UE determines the SSC mode. (Source: Motorola Mobility, Lenovo).
Abstract: Proposes Interim agreement on how the UE determines the SSC mode.

Discussion and conclusion:

There were some clarifications and corrections requested. This was further discussed off-line and revised in TD S2-166093. Further clarifications were needed and this was revised according to agreed changes, in TD S2-166247 which was Agreed in parallel session. This was block approved.

TD S2-165889 (P-CR) Interim Agreements for KI 6. (Source: Huawei, HiSilicon).
Abstract: This contribution discusses and proposes the interim agreements for KI_6.

Discussion and conclusion:

There were some clarifications and corrections requested. This was further discussed off-line and revised, merging TD S2-165579, in TD S2-166094. Some further corrections were needed and this was revised accordingly in TD S2-166248 which was Agreed in parallel session. This was block approved.

TD S2-165811 (P-CR) Relationship between SSC mode and SM models. (Source: ZTE Corporation).
Abstract: It is proposed that the Multiple parallel PDU sessions model and Multi-homed PDU session model are applied to SSC mode 2 and SSC mode 3.

Discussion and conclusion:

This was reviewed in parallel session and was merged with TD S2-165590 into TD S2-166086.

Updates

TD S2-165547 (P-CR) Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths. (Source: InterDigital).
Abstract: Update to Solution 6.5.2 'Enabling (re)selection of efficient user plane paths' due to inconsistencies in call flow.

Discussion and conclusion:

There were some clarifications and corrections requested. This was further discussed off-line and revised in TD S2-166095. Error in uploaded document. Revised in TD S2-166235. Further issues were raised and this was revised off-line in TD S2-166249 which was reviewed and approved.

TD S2-165591 (P-CR) Updates to solution 6.6.1. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Updates to solution 6.6.1.

Discussion and conclusion:

There were some clarifications and corrections requested. This was further discussed off-line and revised in TD S2-166096. Some clarifications were added and this was revised in TD S2-166250 which was Agreed in parallel session. This was block approved.

TD S2-165611 (P-CR) Update of enable efficient user plane paths. (Source: Huawei, HiSilicon).
Abstract: It proposes to add the UE information for the UP function selection.

Discussion and conclusion:

Not Handled.

TD S2-165612 (P-CR) Update of Multiple Tunnel based traffic offload. (Source: Huawei, HiSilicon).
Abstract: It proposes to update the Multiple Tunnel based traffic offload solution.

Discussion and conclusion:

Not Handled.

TD S2-165625 (P-CR) Update on solution 6.6.1. (Source: LG Electronics, SK Telecom).
Abstract: This contribution proposes an update to solution 6.6.1.

Discussion and conclusion:

Not Handled.

TD S2-165658 (P-CR) Clarification on the UL UP function for traffic branching. (Source: China Mobile).
Abstract: this proposal is to clarify how the UL UP function is used for traffic branching while avoid always adopt two hops in the traffic path to achieve efficient traffic forwarding.

Discussion and conclusion:

Not Handled.

TD S2-165715 (P-CR) UE triggered SSC mode update (update to solution 6.6.1). (Source: Interdigital).
Abstract: Introduction of UE triggered PDU connection modification procedure to update SSC mode.

Discussion and conclusion:

Not Handled.

TD S2-165743 (P-CR) Updates to Session Continuity Section. (Source: Samsung).
Abstract: This contribution provides updates to section 6.6.1.1.4.1.

Discussion and conclusion:

Not Handled.

TD S2-165777 (P-CR) SSC mode update call flows. (Source: CATT).
Abstract: This paper adds call flows for SSC mode update.

Discussion and conclusion:

Not Handled.

TD S2-165599 (P-CR) Evaluation of Solution 4.14, 5.2 and 5.4. (Source: KDDI, Sprint).
Abstract: This document evaluates the solutions 4.14, 5.2, and 5.4 which are used for the traffic offload.

Discussion and conclusion:

Not Handled.

TD S2-165805 (P-CR) Update to Solution 5.2. (Source: Samsung).
Abstract: This contribution proposes update to the solution 5.2.

Discussion and conclusion:

Not Handled.

TD S2-165809 (P-CR) Clarification on the SSC mode. (Source: ZTE Corporation).
Abstract: It is proposed that same SSC mode is applied to all PDU sessions of one UE towards same Data Network.

Discussion and conclusion:

Not Handled.

TD S2-165854 (P-CR) Update of solution 6.5.4. (Source: NTT DOCOMO, ZTE, CATR).
Abstract: This contribution updates solution 6.5.4 to remove two FFSs in the solution.

Discussion and conclusion:

Not Handled.

TD S2-165873 (P-CR) solution 6.1 update for SSC mode 3. (Source: Orange).
Abstract: This document proposes modifications to the procedure 'CN-provided trigger followed by UE-requested PDU Session (SSC mode 3)' in solution 6.1 for the support of session and service continuity, in order to reduce the signalling traffic.

Discussion and conclusion:

Not Handled.

6.10.7 Updates and solutions for key issue 7: Network function granularity and interactions between them

TD S2-165643 (P-CR) Interim agreements for KI 7. (Source: Huawei, HiSilicon, Sprint, CATR).
Abstract: This contribution discusses and proposes the interim agreement on NF discovery and selection.

Discussion and conclusion:

Orange asked for clarification of bullet 3. Ericsson asked for clarification of the 'profile'. Other issues were raised and this was further discussed off-line and revised, merging TD S2-165810, in TD S2-166140 which was reviewed. Further clarifications were needed and this was revised in TD S2-166255 which was approved.

TD S2-165644 (P-CR) Interface for interconnection. (Source: Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom).
Abstract: This contribution discusses and proposes the interim agreement on the interface for NF interconnection.

Discussion and conclusion:

There were a number of issues raised and clarifications required. This was left for further off-line discussion and revised in TD S2-166141. Revised off-line in TD S2-166253. Further clarifications were needed and this was further discussed off-line and revised in TD S2-166256 which was reviewed and approved.

TD S2-165775 (P-CR) Interim agreements for control plane interconnection model. (Source: Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, Deutsche Telekom, AT&T, Verizon, China Mobile, Oracle).
Abstract: The contribution proposes updates to the interim agreements for control plane interconnection model.

Discussion and conclusion:

Intel commented that using the data store would just move the vulnerability from the Network Function to the DS. Nokia clarified that the DS is decoupled from the NF and the NF can operate independently. Ericsson commented that this would rely on the data being available and should be further studied. AT&T supported the concept of this proposal. The proposal in TD S2-165801 was reviewed. This was left for off-line discussion and revised in TD S2-166143. This was withdrawn (not provided).

TD S2-165801 (P-CR) Interim agreements for KI 7. (Source: Cisco Systems, Inc., Ericsson).
Abstract: Proposes interim agreements for key issue 7.

Discussion and conclusion:

Response contribution in TD S2-165902. This was left for off-line discussion and revised in TD S2-166144. Further corrections and alignments were needed and this was further discussed off-line and revised in TD S2-166257 which was reviewed. After some discussion of this proposal and it was decided to include the editor's notes in TD S2-166258. Merged with TD S2-166258 into TD S2-166284.

TD S2-165772 (P-CR) Updates on solution for Control plane interconnection model with a data layer. (Source: Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera).
Abstract: Updates on solution for Control plane interconnection model with a data layer.

Discussion and conclusion:

There was some discussion and issues raised and this was left for further off-line discussion and revised in TD S2-166142. Further clarifications were needed and this was further discussed off-line and revised in TD S2-166258 which was reviewed. There was some discussion and it was decided to remove an example and merge the editor's note of TD S2-166257 and other corrections, which was revised off-line, merging parts of TD S2-166257, in TD S2-166284. There was not enough remaining meeting time for coming back on TD S2-166284, which was not handled.
The SA WG2 Chairman suggested that the merge together with a disclaimer is added to the TR to show the current status, to enable further discussions and evaluations. It was decided that this should be done by the Rapporteur when implementing the TR. The disclaimer clarifies that the solution description in the TR was updated based on TD S2-166284 although not all aspects of TD S2-166284 were fully discussed due to lack of time. There was no objection to this.

TD S2-165810 (P-CR) Clarification on the direct interaction. (Source: ZTE Corporation).
Abstract: It is clarified that the source NF may use name or IP address or logic identity to identify the destination NF for direct interaction.

Discussion and conclusion:

T-Mobile suggested this was a stage 3 issue and should be left to stage 3 groups. This was left for off-line discussion and merged with TD S2-165643 in TD S2-166140.

TD S2-165902 (DISCUSSION) Response to 'Interim agreements for KI 7' proposal in S2-165801. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Proposes Response to 'Interim agreements for KI 7' proposal in S2-165801.

Discussion and conclusion:

LATE REQ. LATE DOC: Rx 17/10, 00:50. Not Handled.

TD S2-166056 (DISCUSSION) Reply to S2-165902. (Source: Cisco, Ericsson).
Abstract: Reply to S2-165902.

Discussion and conclusion:

Created at meeting. Not Handled.

6.10.8 Updates and solutions for key issue 8: Next Generation core and access – functional division and interface

This agenda item was convened by Magnus Olsson (Ericsson).

TD S2-166099 (P-CR) Interim Agreements on common AN-CN interface (revision of TD S2-165711). (Source: Motorola Mobility, Lenovo, Broadcom).
Abstract: Proposes Interim Agreements on common AN-CN interface.

Parallel comment: Motorola Mobility commented that this revision takes into account proposals in TD S2-165767, TD S2-165992 and TD S2-165895.

Discussion and conclusion:

Motorola Mobility clarified that only the discussion text and not the proposal text has been updated in this document. Qualcomm welcomed this effort to consolidate proposals and requested some clarifications. AT&T commented that they did not agree with this evaluation as the IEEE 802.11 work on this should be awaited before deciding upon solutions. Nokia commented that the CT functions and signalling should be the same as for trusted accesses. There was some discussion and issues raised regarding the trusted and untrusted non-3GPP accesses. AT&T commented that if functions are natively supported then no interworking function is needed. Intel clarified that the objective of the key issue is for common core and IWF is needed to provide the NG2 and NG3 interfaces from non-3GPP accesses, which do not have them. This was left for further off-line discussion and revised in TD S2-166126. Further corrections were needed and this was further discussed off-line and revised in TD S2-166252 which was reviewed and approved.

TD S2-165592 (P-CR) untrusted access to NGC: update to solution 8.6 and Interim agreement. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Refines solution 8.6 and proposes baseline interim agreements.

Discussion and conclusion:

The Interim agreement part was merged into TD S2-166126. The remaining parts were discussed and some issues raised. This was left for further off-line discussion and revised in TD S2-166128. Further corrections were needed and this was further discussed off-line and revised in TD S2-166251 which was reviewed. A correction to the signalling path information was needed and this was revised in TD S2-166282 which was approved.

TD S2-165681 (P-CR) Working assumptions proposal for N3GPP. (Source: Huawei, HiSilicon).
Abstract: This contribution proposes some interim agreements for N3GPP access.

Discussion and conclusion:

This was merged into TD S2-166126.

TD S2-165767 (P-CR) Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access. (Source: Qualcomm Inc).
Abstract: the paper introduces a way forward for the support of non-3GPP accesses in the NextGen network.

Discussion and conclusion:

The Interim agreement part was merged into TD S2-166126. The remaining parts were discussed and some issues raised. This was left for further off-line discussion and revised , merging TD S2-165562, in TD S2-166129 which was reviewed. Further issues were raised and this was further discussed off-line and revised in TD S2-166254 which was reviewed. Some corrections were needed and this was revised in TD S2-166283 which was approved.

TD S2-165824 (P-CR) Some Interim Agreements on KI#8. (Source: CATT, CATR).
Abstract: it is proposed to update Interim agreements on KI#8, on the termination of NAS signalling, the transport aspects of NAS signalling, and etc.

Discussion and conclusion:

There were some clarifications required and this was revised accordingly in TD S2-166127 which was Agreed in parallel session. This was block approved.

TD S2-165827 (P-CR) Interim agreements on the interface between UE and Next Generation Core. (Source: LG Electronics).
Abstract: This contribution proposes interim agreements on the interface between UE and Next Generation Core.

Discussion and conclusion:

There were some issues raised and it was not considered a decision for SA WG2 to make. this was then noted.

TD S2-165895 (DISCUSSION) Way forward on accomplishing a single AN-CN interface. (Source: Intel).
Abstract: proposes a way forward on accomplishing a single AN-CN interface.

Discussion and conclusion:

Noted in parallel session.

TD S2-165562 (P-CR) Update to Solution 8.6. (Source: Ericsson).
Abstract: This contribution proposes resolutions to a number of open issues in solution 8.6.

Discussion and conclusion:

This was merged with TD S2-165767 into TD S2-166129.

TD S2-165650 (P-CR) Solution: Standalone non-3GPP access via NG2/NG3. (Source: Motorola Mobility, Lenovo, Broadcom, CMCC).
Abstract: This document specifies a new solution that supports access to NextGen CN via non-3GPP accesses by using the common NG2/NG3 interfaces.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166130 which was reviewed and approved.

TD S2-165680 (P-CR) Solution of carrying NAS directly as IKEv2 parameter for untrusted WLAN access. (Source: Huawei, HiSilicon).
Abstract: This contribution completes the alternative description when the NAS message is carried directly as IKEv2 parameters.

Discussion and conclusion:

Not Handled.

TD S2-165735 (P-CR) Update of Solution 8.3. (Source: ETRI).
Abstract: This contribution proposes to update of the solution 8.3 for supporting non-3GPP access.

Discussion and conclusion:

Not Handled.

TD S2-165880 (P-CR) Update to Solution 8.2. (Source: Intel).
Abstract: updates solution 8.2.

Discussion and conclusion:

Not Handled.

TD S2-165787 (P-CR) Evaluation on Solution 8.5: Alternative C for the interface between UE and Next Generation Core. (Source: LG Electronics).
Abstract: This contribution proposes to evaluate the solution 8.5: Alternative C for the interface between UE and Next Generation Core.

Discussion and conclusion:

Not Handled.

6.10.9 Updates and solutions for key issue 9: 3GPP architecture impacts to support network capability exposure

This topic was not on the agenda for this meeting.

6.10.10 Updates and solutions for key issue 10: Policy Framework

TD S2-165536 (P-CR) Interim agreements on the Policy Framework. (Source: Ericsson, ZTE, Oracle).
Abstract: Proposed interim agreements on key issue for Policy.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166133. This was left for e-mail approval. e-mail approved.

TD S2-165534 (P-CR) Updates in Policy Reference Architecture to reflect roaming aspects. (Source: Ericsson).
Abstract: Proposes to complete solution 6.10.4 to cover the roaming aspects in the reference policy architecture.

Discussion and conclusion:

There was some discussion on whether S9 should be introduced when it is not known if it is required and whether it should be added as an optional interface. This was left for further off-line consideration with respect to other MM contributions and was revised in TD S2-166134. This was withdrawn (not provided).

TD S2-165535 (P-CR) Discussion on the need to send policies to the UE. (Source: Ericsson).
Abstract: Proposed interim agreements on the need to send access network selection policies to the UE.

Discussion and conclusion:

Not Handled.

TD S2-165537 (P-CR) On the need on an interface between Policy and SDM. (Source: Ericsson).
Abstract: Proposed interim agreements to use UDR and SPR as repository.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166135 which was reviewed. There were further issues raised, so this was postponed to the next meeting.

TD S2-165647 (P-CR) TSSF and Policy. (Source: Huawei, HiSilicon).
Abstract: This paper proposes to update the Policy WT and update the policy parameters to support TSSF.

Discussion and conclusion:

This was reviewed and agreed in parallel session. This was block approved.

TD S2-165740 (P-CR) solution for enhanced encrypted traffic detection. (Source: China Telecom, Alibaba).
Abstract: This contribution proposes the service token method as a solution for encrypted traffic detection.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166136 which was reviewed and approved.

TD S2-165878 (P-CR) Policy on RAT/Frequency Selection Priority. (Source: Huawei, HiSilicon).
Abstract: This contribution proposes to add support of Policy on RAT/Frequency selection priority to the KI, work tasks and solutions for policy framework.

Discussion and conclusion:

Ericsson commented that it should be clarified that the selection parameter is an ***Index***. Other clarifications were needed and this was further discussed off-line and revised in TD S2-166137 which was reviewed. Further issues were raised and this was left for further off-line discussion and revised in TD S2-166259. This was left for e-mail approval. e-mail approved.

TD S2-165771 (P-CR) Updates to Overall architecture option #6. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: Policy Architecture solution proposal with CP functional split.

Discussion and conclusion:

The table should be clarified to indicate what isn't included and why and the meaning of Access Type Selection should be clarified. This was further discussed off-line and revised in TD S2-166138 which was reviewed. AT&T commented that interworking aspects need to be addressed. Nokia replied that this is only one solution and such issues can be reviewed later. this was then approved.

TD S2-165569 (P-CR) Discussions and proposals on the considerations of Policy Control Framework for Network Slicing support. (Source: ZTE Corporation, Oracle, Telecom Italia, ETRI).
Abstract: Proposed adding a new solution to clause 6.10 on Policy Control Framework to support Network Slicing.

Discussion and conclusion:

LATE DOC: Rx 11/10, 19:40. There were some issues raised and this was left for further off-line discussion and revised in TD S2-166139 which was reviewed and approved.

TD S2-165712 (DISCUSSION) Discussion Paper on NextGen Support of Dynamic Policy Control. (Source: U.S. Department of Commerce).
Abstract: Normative Stage 1 service requirements for SMARTER (Rel-15) are under development by SA WG1 that require NextGen architecture support of Dynamic Policy Control, which is a mission-critical feature of vital importance to public safety.
Discussion is needed in SA WG2 to clarify the extent to which the ongoing NextGen architecture study supports this new feature and as part of information to be provided to SA WG1 regarding the priorities and timing for SA WG2's NextGen (5G) architecture work.

Discussion and conclusion:

This was reviewed and noted. Member companies were encouraged to consider contributing on this topic if necessary.

6.10.11 Updates and solutions for key issue 11: Charging

This topic was not on the agenda for this meeting.

6.10.12 Updates and solutions for key issue 12: Security framework

This topic was not on the agenda for this meeting.

6.10.13 Updates and solutions for key issue 13: Broadcast/Multicast Capabilities

This topic was not on the agenda for this meeting.

6.10.14 Updates and solutions for key issue 14: Support for Off-Network Communication

This topic was not on the agenda for this meeting.

6.10.15 Updates and solutions for key issue 15: NextGen core support for IMS

This topic was not on the agenda for this meeting.

6.10.16 Updates and solutions for key issue 16: 3GPP system aspects to support the connectivity via a relay UE

This topic was not on the agenda for this meeting.

6.10.17 Updates and solutions for key issue 17: 3GPP architecture impacts to support network discovery and selection

This agenda item was convened by Magnus Olsson (Ericsson).

TD S2-165542 (DISCUSSION) A new solution for key issue 17 (introductory slides). (Source: NICT, ATR).
Abstract: This contribution proposes an additional solution to key issue 17: 3GPP architecture impacts to support network discovery and selection to TR 23.799. The proposal enables flexible and cost-efficient solution to provide 5G coverage in residential, commercial, and industrial properties.

Discussion and conclusion:

Not Handled.

TD S2-165543 (DISCUSSION) A new solution for key issue 17 (proposed text). (Source: NICT, ATR).
Abstract: This contribution proposes an additional solution to key issue 17: 3GPP architecture impacts to support network discovery and selection to TR 23.799. The proposal enables flexible and cost-efficient solution to provide 5G coverage in residential, commercial, and industrial properties.

Discussion and conclusion:

Not Handled.

TD S2-165685 (P-CR) Network Discovery and Selection for 3GPP access technologies. (Source: Huawei, HiSilicon).
Abstract: The contribution proposes that network discover and selection is independent with network slice selection, and introduces a high-level solution for key issue 17 for 3GPP access technologies.

Discussion and conclusion:

Not Handled.

TD S2-165768 (P-CR) Update and evaluation of solution 6.17.1 for Key Issue 17 on Network Discovery and Selection in idle mode. (Source: Qualcomm Incorporated).
Abstract: he contribution updates solution 6.17.1 for Key Issue 17 in idle mode and proposes an evaluation of the solution.

Discussion and conclusion:

Not Handled.

TD S2-165769 (P-CR) Proposed way forward for Key Issue 17 on Network Discovery and Selection. (Source: Qualcomm Incorporated).
Abstract: the contribution proposes to select solution 6.17.1 to address the 3GPP access-related aspects of Key Issue 17 on network discovery and selection.

Discussion and conclusion:

Not Handled.

TD S2-165870 (P-CR) Solution to KI 17: PLMN+RAT discovery and selection. (Source: Nokia).
Abstract: The contribution proposes a solution for Key Issue #17: Network discovery and selection.

Discussion and conclusion:

Not Handled.

TD S2-165871 (P-CR) Interim agreements on KI 17: Network discovery and selection. (Source: Nokia).
Abstract: The contribution proposes interim agreements for Key Issue #17.

Discussion and conclusion:

Not Handled.

6.10.18 Updates and solutions for key issue 18: Interworking and Migration

TD S2-165486 (DISCUSSION) Considerations on voice support in NGS. (Source: MediaTek Inc).
Abstract: This contribution makes a number of simple proposals for voice continuity considering NGS and EPS to ensure it is not an afterthought of NGS.

Discussion and conclusion:

Forward from agenda item 6.10.6. Noted in parallel session.

TD S2-165868 (P-CR) Updates on interworking and migration solution 18.2: Overall. (Source: Nokia, Qualcomm Incorporated, KDDI).
Abstract: The contribution proposes updates to the solution for interworking and migration for Key Issue #18.

Discussion and conclusion:

This was reviewed and some corrections were requested. This was revised off-line in TD S2-166100 which was reviewed and approved.

TD S2-165869 (P-CR) Updates on interworking and migration solution 18.2: Call flows. (Source: Nokia, KDDI, Qualcomm Incorporated).
Abstract: The contribution proposes updates to the solution for interworking and migration for Key Issue #18.

Discussion and conclusion:

This was reviewed and the update proposed in TD S2-165657 was considered. This was further discussed off-line and revised in TD S2-166101 which was reviewed and approved.

TD S2-165657 (P-CR) Solution for single radio based lightweight interworking and migration. (Source: Huawei).
Abstract: In order to minimize the need to support mapping between EPS and NGS concepts, this paper proposes a single radio based lightweight interworking and migration which avoids the SM mapping between the EPS and the NGS.

Discussion and conclusion:

It was clarified that the PGW was the same as introduced for CUPS. AT&T preferred this architectural diagram as it separates out the interworking functionality. This was further discussed off-line and revised in TD S2-166102. It was decided to merge TD S2-165657 into TD S2-166100 and TD S2-166102 and TD S2-166102 was withdrawn.

TD S2-165583 (P-CR) Update to solution 18.4. (Source: China Telecom).
Abstract: updates solution 18.4 with a minor modification.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165867 (P-CR) Update to Solution 18.4. (Source: Intel).
Abstract: proposes updates to Solution 18.4.

Discussion and conclusion:

There were a number of issues raised and corrections requested. This was left for further off-line discussion and revised, merging TD S2-165874, in TD S2-166103 which was reviewed. Further corrections were needed and this was revised off-line in TD S2-166261. This was left for e-mail approval. e-mail revision 2 approved. Revised to TD S2-166292. Approved.

TD S2-165874 (P-CR) An NGC/EPC Interworking Solution. (Source: Samsung, KT, Telecom Italia, SKT).
Abstract: Proposed a loose interworking solution which minimizes impact on NGC and EPC.

Discussion and conclusion:

There were some issues raised with alternative 2 as it introduces legacy interfaces (e.g. S1-u) into the new Core. This was further discussed off-line and merged with TD S2-165867 into TD S2-166103.

TD S2-165593 (P-CR) Migration solution with Evolved E-UTRAN to operate EPC and NextGen Core simultaneously. (Source: LG Electronics, SK Telecom). (Revision of TD S2-164423).
Abstract: This paper proposes the migration solution with Evolved E-UTRAN to operator with an EPC and a NextGen Core simultaneously.

Discussion and conclusion:

Revision of TD S2-164423 from S2#116BIS (Not Handled). Qualcomm commented that the scenarios are similar to their proposal in TD S2-165668 and suggested merging the documents. This was left for further off-line discussion to clarify the text and revised in TD S2-166105 which was reviewed. An issue with emergency call support was raised. Nokia suggested replacing the use cases with an editor's note that this should be studied. Qualcomm suggested studying this at the next meeting and noting this proposal. It was decided to agree this now and work on the evaluation at the next meeting. This was revised to clarify the use-cases need further study in an editor's note in TD S2-166262 which was approved.

TD S2-165667 (P-CR) Way forward on EPC-NG Core Interworking. (Source: Qualcomm Incorporated, Huawei, Nokia).
Abstract: Proposes way forward for solutions for EPC-NG Core interworking to key issue 18.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion to clarify the text and revised in TD S2-166104 which was reviewed. Further issues were raised and this was left for further off-line discussion and revised in TD S2-166263.This was left for e-mail approval. e-mail approved.

TD S2-165668 (P-CR) Way forward on migration from option 3 to NG Core. (Source: Qualcomm Incorporated, Ericsson, NTT Docomo, AT&T, MediaTek, KDDI, Rogers Communications Canada, Nokia, KT, Vodafone, Apple).
Abstract: Proposes way forward for migration from option 3 to other NG Core based options (i.e. 2, 4, 5, 7) under key issue 18.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion to clarify the text and revised in TD S2-166106 which was reviewed. LG Electronics requested the text on the interim agreement to be removed. Qualcomm clarified that there is a proposal from LG Electronics which changes this text and that should be considered separately. This was then approved.

TD S2-165840 (P-CR) Interim Agreements on Key Issue #18. (Source: China Telecom).
Abstract: Discusses and proposes the interim agreements on Key Issue #18 'Interworking and Migration'.

Discussion and conclusion:

LATE DOC: Rx 14/10, 08:45. Not Handled.

TD S2-165672 [DRAFT] LS on migration from Option 3 to NextGen Core. (Qualcomm Incorporated)
Abstract: SA WG2 would like to inform RAN WG2, RAN WG3 and RAN and that in the context of the NextGen SI has concluded on the topic of migration from deployment option 3 documented in Annex J of TR 23.799 to other NextGen based deployment options e.g. option 2, 4, 5, 7. SA WG2 agreed that such migration is feasible and selected solution 6.18.3 in TR 23.799. SA WG2 expects that RAN related aspects of this solution to be addressed by RAN WGs.

Discussion and conclusion:

There were some issues raised and this was left for further off-line discussion and revised in TD S2-166107. This was left for e-mail approval. e-mail revision 3 approved. Revised to TD S2-166288. Approved.

TD S2-165565 (P-CR) Input to multiple Key Issues: NextGen core support for IMS. (Source: Ericsson, AT&T?).
Abstract: provides IMS implications on NextGen core.

Discussion and conclusion:

Confirm sources. Not Handled.

TD S2-165848 (P-CR) Multimedia calls fallback from NextGen system to EPS. (Source: NTT DOCOMO).
Abstract: A solution to enable multimedia calls fallback from NextGen system to EPS.

Discussion and conclusion:

Not Handled.

6.10.19 Updates and solutions for key issue 19: Architecture impacts when using virtual environments

TD S2-165884 (P-CR) Key Issue #19: EPC/NGCN updates for 'virtualisation'. (Source: Vodafone).
Abstract: Solutions are needed that allow a data centre to be removed from service while the UE is in PSM's deep sleep state.

Discussion and conclusion:

There were a number of issues raised and clarification of the scenarios to be covered by this proposal. This was left for further off-line discussion and revised in TD S2-166132 which was reviewed. Deutsche Telekom indicated support for this proposal. Nokia commented that 'between RAN and RAN' should be removed as this is outside SA WG2 Scope. This was left for further off-line discussion and revised in TD S2-166264. This was left for e-mail approval. e-mail approved.

6.10.20 Updates and solutions for key issue 20: Traffic Steering, Switching and Splitting between 3GPP and non-3GPP Accesses

This topic was not on the agenda for this meeting.

6.10.21 Updates and solutions for key issue 21: Minimal connectivity within extreme rural deployments

This topic was not on the agenda for this meeting.

6.10.22 Input for TR clause 7 (Overall architecture proposals)

TD S2-165651 (P-CR) Consolidate overall architecture based on existing architecture options. (Source: China Mobile, AT&T, Telecom Italia, Sprint, ZTE, CATR).
Abstract: Consolidate the overall architecture based on current requirement, assumption, interim agreement and commonalities among architecture options.

Discussion and conclusion:

There was some discussion and a number of proposals for this and this was left for further off-line discussion in drafting sessions and revised, merging TD S2-165778, in TD S2-166017.

TD S2-166017 (P-CR) Agreement on the overall architecture. (Source: Editor (China Mobile)).
Abstract: Capture the agreement on the overall architecture initially based on draft session and will move forward based on this.

Discussion and conclusion:

T-Mobile commented that there are still references to MM and MIF and requires further clean-up. Qualcomm commented that the NF Repository Function was unclear whether it is an architectural function or a lower-level function and asked for clarification on how the common 'bus' interface will function. There were a number of other issues discussed and this was left for further consideration after reviewing other proposals. This was left for further off-line drafting to try to come to agreements on some questions and was revised in TD S2-166171 which was reviewed. Qualcomm commented that there is no description of the exposure function in the list. This was left for off-line discussion and revised in TD S2-166265 which was reviewed. The bullet needed splitting into two and this was left to the editor. This was then approved.

TD S2-165694 (P-CR) Interim Agreements on Consolidated Architecture Options. (Source: Deutsche Telekom).
Abstract: This contribution proposes interim agreements for the consolidated architecture options.

Discussion and conclusion:

There were a number of comments and clarifications requested, it was also proposed to first discuss roaming architecture before trying to simplify to this extent. This was left for further off-line discussion and revised in TD S2-166018 which was reviewed. Qualcomm commented that this should be aligned with the terminology used in the China Telecom proposal and suggested adding the differences in this document to the China Telecom text and avoid introducing two solutions into the TR, as it needs to be stabilised. It was decided to merge the principles with TD S2-166171 into TD S2-166265.

TD S2-165778 (P-CR) Interim agreements on Overall architecture aspects. (Source: Nokia).
Abstract: Interim agreements on Overall architecture aspects.

Discussion and conclusion:

This was proposed as a minimum subset to identify reference points which need to be specified. There were some comments and clarifications and it was decided to merge this with TD S2-165651 into TD S2-166017.

TD S2-165770 (P-CR) Updates to Overall architecture option #6. (Source: Nokia, Alcatel-Lucent Shanghai Bell, Verizon, Cisco, Samsung, Intel, LGE).
Abstract: Updates to overall architecture option 6.

Discussion and conclusion:

Qualcomm asked to add the further options which were proposed off-line. Nokia clarified the options they had asked to be added which were not included. Other issues were raised and this was left for further off-line discussion and revised in TD S2-166149 which was reviewed and approved.

TD S2-165564 (P-CR) Next Generation Network Architecture: Soln 6. (Source: Ericsson).
Abstract: Updates to Soln 6.

Discussion and conclusion:

Ericsson commented that they did not expect convergence on this at this meeting, but believe that a single architecture can be developed for both roaming and non-roaming cases and asked for consideration of this proposal. Some clarifications and comments were made and this was then noted.

TD S2-165692 (P-CR) Update of Consolidated Architecture Option 4. (Source: Deutsche Telekom AG).
Abstract: This input provides updates to the Consolidated Architecture Option 4.

Discussion and conclusion:

This was reviewed and agreed in parallel session. This was block approved.

TD S2-165881 (P-CR) Update to consolidate architecture option 6. (Source: BT).
Abstract: This paper presents a number of updates to consolidated architecture (option 6) to allow a user to have access to multiple access networks and have better support for convergence.

Discussion and conclusion:

There were some overlaps with the proposal for Key issue 4 in TD S2-165682 and was merged with this off-line into TD S2-166108.

TD S2-165645 (P-CR) Solution: Consolidated architecture option X. (Source: Huawei, Hisilicon, CATR).
Abstract: This contribution proposes one consolidated architecture.

Discussion and conclusion:

There was some discussion and requests for clarification of the exposure reference points. This was lef tfor further off-line discussion and revised in TD S2-166170 which was reviewed and approved.

TD S2-165563 (P-CR) Next Generation Network Architecture: Soln 3. (Source: Ericsson).
Abstract: Updates to Soln 3.

Discussion and conclusion:

Not Handled.

TD S2-165807 (P-CR) Architecture for concurrent access to same Data Network. (Source: ZTE Corporation).
Abstract: it is proposed to capture a separated architecture for concurrent access to same Data Network in clause 7.3.

Discussion and conclusion:

Not Handled.

TD S2-166050 (DISCUSSION) Service-based architecture: What does it mean for NextGen ?. (Source: Huawei).
Abstract: Discussion document describing what a service-based architecture means for us.

Discussion and conclusion:

Created in drafting session. Not Handled.

6.11 Service Domain Centralization (SeDoC)

This topic was not on the agenda for this meeting.

6.12 Sponsored data connectivity improvements (SDCI)

This topic was not on the agenda for this meeting.

6.13 Architecture enhancements for LTE support of V2X services (V2XARC)

This agenda item was convened by LaeYoung Kim (LG Electronics).

Incoming LSs

TD S2-165490 LS from RAN WG1: LS on RAN WG1 agreements for LTE-based V2X. (RAN WG1)
Abstract: RAN WG1 would like to inform the agreements made in RAN WG1 for LTE support for V2X.
RAN WG1 discussed enhancements to LTE uplink and reached the following agreements:
Agreements:
- A SPS RNTI for V2X over Uu is necessary.
  - FFS whether this SPS RNTI is specific to V2X or can be the same as the legacy SPS C-RNTI
- A DCI format 0 for V2X scrambled by the SPS RNTI for V2X is used to activate or update the SPS.
- Both explicit release and an implicit release mechanism for SPS over Uu are supported (details FFS).
- Explicit signalling from the UE to the eNB (ask RAN WG2 if they can design the appropriate signalling, e.g. using a MAC CE) can be used to indicate to the eNB when activation/update/release is desired.
  - For activation, a 'desirable time offset' (e.g. relative to SFN0) is included
- When the period is to be changed, the UE notifies the eNB with the new period
- Multiple SPS configurations can be active at the same time.
  - An indicator(s) in DCI format 0 (e.g. SPS index or an indicator mapped to SPS index) is used to differentiate SPS configurations. -> FFS whether existing field(s) (e.g. TPC for PUSCH) is reused or a new field is added
  - FFS whether each SPS configuration is always activated/released by a separate DCI or whether multiple SPS configurations can be activated or released by a single DCI.
- In the event of a resource conflict between SPS configurations, only one transmission can occur
  - RAN WG1 leaves it up to RAN WG2 to determine any possible mechanism for resolving resource conflicts between SPS configurations

RAN WG1 also discussed enhancements to LTE sidelink for V2P services and reached the following agreements:
Agreement:
- The specification supports the possibility for a P-UE to use random selection, including at least all P-UEs which do not have sidelink Rx capability
- If a P-UE uses random selection, it shall only pools in which random selection by P-UEs is permitted
- It is up to network configuration whether a pool in which random selection by P-UEs is permitted overlaps with other pools
- The specification supports the possibility to configure pools in which random selection by P-UEs is not permitted
- The specification supports the possibility for a P-UE to use partial sensing in a subset of subframes
- Details of P-UE partial sensing are FFS
- V2V sensing-based resource selection is the baseline; strive to define P-UE partial sensing-based resource selection to be as similar as possible to V2V sensing-based resource selection
- FFS whether support of partial sensing is mandatory for P-UEs with sidelink Rx capability
- FFS under what conditions a P-UE that supports partial sensing uses partial sensing
- If a P-UE uses partial sensing,
- details of resource pool FFS.

Action: RAN WG1 respectfully ask RAN WG2, RAN WG3, and SA WG2 to take the above RAN WG1 agreements into consideration.

Discussion and conclusion:

Noted in parallel session.

TD S2-165906 LS from RAN WG2: Response LS on Multiple TMGIs for support of small and variable MBMS areas. (RAN WG2)
Abstract: RAN WG2 has discussed two options for MBMS session reception (i.e. so-called Option 2 and Option 4), as outlined by RAN WG3 in R2-166012. As a result, the following agreements have been reached:
- From RAN WG2 standards perspective Option 2 and Option 4 are feasible and can be supported
- According to the legacy specification, UE is not required to monitor more than one MBSFN area but a UE implementation may be able to.

Discussion and conclusion:

LATE DOC: Rx 16/10, 11:30. Noted in parallel session.

Cat B

TD S2-165584 23.285 CR0002 (Rel-14, 'B'): Introducing reliability parameter on PC5 QoS handling. (Source: Huawei, HiSilicon).
Abstract: Summary of change: Introducing reliability parameter on PC5 QoS handling and defining a mechanism to provide reliability to low layer while high layer is passing a V2X message to low layer for transmission.

Discussion and conclusion:

Noted in parallel session.

TD S2-165631 23.285 CR0004 (Rel-14, 'B'): Mapping between PPPP and latency for autonomous resources selection mode. (Source: Huawei, HiSilicon, LG Electronics, Ericsson).
Abstract: Summary of change: Mapping between PPPP and latency is provisioned by network and used in autonomous resources selection mode.

Discussion and conclusion:

Revised in parallel session to TD S2-166029. Agreed in parallel session. This was block approved.

Cat F

TD S2-165508 (DISCUSSION) V2x message transport mechanism over LTE-Uu reference point. (Source: Ericsson).
Abstract: Discussion on why we need to define ITS app Ids over LTE Uu.

Discussion and conclusion:

Noted in parallel session.

TD S2-165509 23.285 CR0001 (Rel-14, 'F'): V2X message handling over LTE Uu. (Source: Ericsson).
Abstract: Summary of change: Updated appropriate sections to define configuration for known V2X message type over LTE Uu and clarified the use of these configuration for service delivery.

Discussion and conclusion:

Revised in parallel session to TD S2-166030. Revised in parallel session to TD S2-166038. Agreed in parallel session. This was block approved.

TD S2-165716 (DISCUSSION) USD definitions for V2X communication. (Source: Qualcomm Incorporated, xxx).
Abstract: Propose the definition of USD for V2X use, for the V2X reception via MBMS and V2X App Server discovery via MBMS.

Discussion and conclusion:

Source needs correction. Noted in parallel session.

TD S2-165717 23.285 CR0012 (Rel-14, 'F'): Definition of the USD for Uu based V2X communication and V2X Application Server discovery. (Source: Qualcomm Incorporated).
Abstract: Summary of change: Define the V2X USD and V2X Server, which contains the necessary configuration information for the UE to use MBMS for V2X communication and V2X Application Server Discovery. Update the reference to USD to V2X USD and V2X Server USD accordingly.

Discussion and conclusion:

Revised in parallel session to TD S2-166031. Agreed in parallel session. This was block approved.

TD S2-165789 (DISCUSSION) V2X USD with E-CGI. (Source: Nokia).
Abstract: This paper proposes to add ECGI list to V2X USD.

Discussion and conclusion:

Noted in parallel session.

Cat B

TD S2-165630 23.285 CR0003 (Rel-14, 'B'): Update of V2X impacts to EPC procedures. (Source: Huawei, HiSilicon, LG Electronics).
Abstract: Summary of change: Add descriptions regarding: - a 'V2X services authorized' indication denotes the UE is authorized to use V2X communication over PC5 reference point as Vehicle UE or Pedestrian UE.

Discussion and conclusion:

Revised in parallel session to TD S2-166032. Agreed in parallel session. This was block approved.

TD S2-165636 23.285 CR0006 (Rel-14, 'B'): Subscription to V2X services. (Source: LG Electronics).
Abstract: Summary of change: Add subscription information to give the user permission to use V2X services.

Discussion and conclusion:

Revised in parallel session to TD S2-166033. Agreed in parallel session. This was block approved.

TD S2-165679 23.285 CR0009 (Rel-14, 'B'): Uplink distribution deployment option. (Source: KPN, LG Electronics).
Abstract: Summary of change: Add informative annex related to uplink distribution deployment option.

Discussion and conclusion:

Revised in parallel session to TD S2-166034. Agreed in parallel session. This was block approved.

Cat F

TD S2-165632 23.285 CR0005 (Rel-14, 'F'): Update of Functional entities description. (Source: Huawei, HiSilicon).
Abstract: Summary of change: 1) Clarify V2 is only used for V2X communication over LTE-Uu; 2) Update the UE functional description of provisioning USD; 3) Update the V2X Control Function description of receiving USD from V2X Application Server.

Discussion and conclusion:

Revised in parallel session to TD S2-166035. Revised in parallel session to TD S2-166039. Agreed in parallel session. This was block approved.

TD S2-165638 23.285 CR0008 (Rel-14, 'F'): PC5-U stack instance for V2X use. (Source: LG Electronics).
Abstract: Summary of change: Add PC5-U stack instance for V2X use in a new informative annex.

Discussion and conclusion:

Noted in parallel session.

TD S2-165713 23.285 CR0010 (Rel-14, 'F'): Clarification on location mapping at V2X Application Server. (Source: Qualcomm Incorporated, Ericsson,).
Abstract: Summary of change: Clarify on the two different options for UE to provide location information to the V2X Application Server. Remove text replicated from TS 23.468 and replace with reference to TS 23.468.

Discussion and conclusion:

Revised in parallel session to TD S2-166036. Agreed in parallel session. This was block approved.

TD S2-165714 23.285 CR0011 (Rel-14, 'F'): Clarification on V2X message reception using MBMS Receive Only Mode. (Source: Qualcomm Incorporated).
Abstract: Summary of change: Clarify that the UE can receive V2X messages via MBMS in Receive Only mode when it has UICC that allows it.

Discussion and conclusion:

Revised in parallel session to TD S2-166037. Noted in parallel session.

TD S2-165637 23.285 CR0007 (Rel-14, 'F'): Clarification on MBMS for LTE-Uu based V2X architecture reference model. (Source: LG Electronics).
Abstract: Summary of change: - Modify clause 4.2.2 title so that same texts are used for the clause title as well as the text and figure caption in clause 4.2.2 - Also, redraw Figure 4.2.2-1 for visibility without any content change (i.e., make just cosmetic change).

Discussion and conclusion:

Agreed in parallel session. This was block approved.

6.14 Study on PS Data off function (FS_PS_DATA_OFF) and related normative work (PS_DATA_OFF)

This agenda item was convened by Krisztian Kiss (Apple).

Architectural Requirements, update of existing key issues, new key issues

TD S2-165600 (P-CR) New architecture requirement. (Source: Intel, Huawei).
Abstract: This paper proposes to add a new architecture requirement.

Discussion and conclusion:

Noted in parallel session.

TD S2-165601 (P-CR) Key issue #4 update. (Source: Intel, Huawei).
Abstract: This paper proposes to update key issue #4 to reflect controlling of media traffic of SIP based services as well.

Discussion and conclusion:

Revised in parallel session to TD S2-165917. Agreed in parallel session. This was block approved.

TD S2-165639 (P-CR) New key issue - informing OTT about the UE's status. (Source: Alibaba).
Abstract: It is suggested to add a new key issue: informing OTT about the UE's status.

Discussion and conclusion:

Noted in parallel session.

Solutions to Key issue 1

TD S2-165514 (P-CR) New Solution 1.5 for Key issue 1. (Source: Ericsson).
Abstract: This document proposes a new solution 1.5 for key issue 1.

Discussion and conclusion:

Revised in parallel session to TD S2-165918. Agreed in parallel session. This was block approved.

TD S2-165516 (P-CR) Update to Solution 1.4. (Source: Ericsson).
Abstract: This document proposes updates to solution 1.4.

Discussion and conclusion:

Revised in parallel session to TD S2-165919. Noted in parallel session.

TD S2-165813 (P-CR) New solution based on PCO for Key Issue#1. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper proposes a solution whereby the UE sends the Data-Off activation status using PCO to the PGW. The proposed solution corresponds to the Key Issue 1 solution using PCO and discussed in S2-165552.

Discussion and conclusion:

Merged in parallel sessions with TD S2-165581 into TD S2-165922.

TD S2-165921 (LS OUT) [DRAFT] LS on PS Data Off. To: CT WG1.

Discussion and conclusion:

Created in parallel session. Revised in parallel session to TD S2-165926. Revised in parallel session to TD S2-165933. Agreed in parallel session. Sent on exceptional e-mail approval in order to transmit quickly to CT WG1 for handling at their ongoing meeting. Revised to correct version number of TS 21.011 to 14.3.0 in TD S2-166118 which was approved and sent to CT WG1.

TD S2-166131 LS from CT WG1: Reply LS on PS Data Off. (CT WG1).
Abstract: CT WG1 would like to thank SA WG2 for their LS on PS Data Off (C1-164541/S2-166118). Regarding the following question: Before selecting a solution, SA WG2 would like to ask CT WG1 whether it is possible to define a new flag (PS Data Off activated/deactivated) in the PCO keeping transparency to MME/SGSN.
CT WG1 Answer: Yes.
Action: To take CT WG1 answer into account.

Discussion and conclusion:

Reply from CT WG1 in response to TD S2-166118. Noted in parallel session.

TD S2-165581 (P-CR) New solution for key issue #1. (Source: Huawei, HiSilicon, Intel).
Abstract: This paper proposes a new solution for key issue #1.

Discussion and conclusion:

Revised in parallel session, merging TD S2-165813, to TD S2-165922. Revised in parallel session to TD S2-165958. Agreed in parallel session. This was block approved.

TD S2-165574 (P-CR) Solution for Key issue 1 - Using USSD/USSI and ADD. (Source: BlackBerry UK Ltd).
Abstract: Provides a new solution for key issue 1 in which Automatic Device Detection is used in conjunction with USSD/USSI.

Discussion and conclusion:

Revised in parallel session to TD S2-165924. Revised in parallel session to TD S2-165959. Agreed in parallel session. This was block approved.

Solutions to Key issue 2

TD S2-165515 (P-CR) New Solution 2.5 for Key issue 2. (Source: Ericsson).
Abstract: This document proposes a new solution 2.5 for key issue 2.

Discussion and conclusion:

Revised in parallel session to TD S2-165925. Agreed in parallel session. This was block approved.

TD S2-165517 (P-CR) Update to Solution 2.3. (Source: Ericsson).
Abstract: This document proposes updates to solution 2.3.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165552 (P-CR) New extendable solutions with no UE modem and no VPLMN impact for early deployment. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper proposes a solution whereby the UE sends the Data-Off activation status using PCO to the PGW. It also proposes to allow no VPLMN impact but with some restrictions on the allowed services (pre-configured UE, same exempted services for all VPLMNs, restricted LBO access).

Parallel comment: Add the word 'provisioning' after 'UICC'.

Discussion and conclusion:

Revised in parallel session to TD S2-165927. Revised in parallel session to TD S2-165960. Revised in parallel session to TD S2-166161. Agreed in parallel session. This was block approved.

TD S2-165576 (P-CR) Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI. (Source: BlackBerry UK Ltd).
Abstract: Provides a solution for key issue 2 in which the UE is made aware of 3GPP PS Data off exempt services using USSD/USSI.

Discussion and conclusion:

Revised in parallel session to TD S2-165928. Revised in parallel session to TD S2-165961. Revised in parallel session to TD S2-165965. Agreed in parallel session. This was block approved.

TD S2-165602 (P-CR) Update and evaluation for solution #2.2. (Source: Intel, Huawei).
Abstract: This paper proposes to update the structure of solution 2.2 and add evaluation.

Parallel comment: Remove evaluation.

Discussion and conclusion:

Revised in parallel session to TD S2-165929. Agreed in parallel session. This was block approved.

Solutions to Key issue 3

TD S2-165518 (P-CR) Update to Solution 3.4. (Source: Ericsson).
Abstract: This document proposes updates to solution 3.4.

Discussion and conclusion:

Revised in parallel session to TD S2-165930. Revised in parallel session to TD S2-165962. Agreed in parallel session. This was block approved.

TD S2-165815 (P-CR) New KI#3 solution: Solution using HSS knowledge of PS Data Off UE status avoiding VPLMN impacts for early deployments. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper proposes a new solution for Key Issue 3 for the case the requirement is to block the downlink packets for LBO non-exempted APNs when PS Data Off is activated, without impact to the VPLMN for early deployments, and with impact to the VPLMN in deployments satisfying all the GSMA/SA WG1 requirements. The solution proposed for inclusion in TR 23.702 is the solution 1 discussed in S2-165552.

Discussion and conclusion:

Revised in parallel session to TD S2-165931. Agreed in parallel session. This was block approved.

TD S2-165816 (P-CR) New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper proposes a new solution for Key Issue 3 for the case there is no requirement to block the downlink packets for LBO non-exempted APNs when PS Data Off is activated, without impact to the VPLMN for early deployments. The solution proposed for inclusion in TR 23.702 is the solution 2 discussed in S2-165552.

Discussion and conclusion:

Revised in parallel session to TD S2-165932. Revised in parallel session to TD S2-165963. Revised in parallel session to TD S2-166162. Agreed in parallel session. This was block approved.

TD S2-165582 (P-CR) Update on solution 3.3. (Source: Huawei, HiSilicon).
Abstract: Clarification on the default bearer's TFT handling for PS DATA OFF.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165603 (P-CR) Update and evaluation for solution #3.2. (Source: Intel, Huawei).
Abstract: This paper proposes to update the structure of solution 3.2 and add evaluation.

Discussion and conclusion:

Revised in parallel session to TD S2-165948. Agreed in parallel session. This was block approved.

Solutions to Key issue 4

TD S2-165577 (P-CR) Key issue 4 solution 4.2 - correction of implementation errors. (Source: BlackBerry UK Ltd).
Abstract: Provides corrections to Solution 4.2.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165519 (P-CR) Update to Solution 4.4. (Source: Ericsson).
Abstract: This document proposes updates to solution 4.4 to complete the solution.

Discussion and conclusion:

Revised in parallel session to TD S2-165949. Agreed in parallel session. This was block approved.

TD S2-165578 (P-CR) Solution for Key Issue 4 - Control of other SIP based services and non SIP based services. (Source: BlackBerry UK Ltd).
Abstract: Adding functionality to police SMSoIP, USSI and other SIP services.

Discussion and conclusion:

Revised in parallel session to TD S2-165950. This was withdrawn (not provided).

TD S2-165604 (P-CR) Update on solutions for key issue #4. (Source: Intel, Huawei).
Abstract: This paper proposes to add editor's notes to address controlling of downlink traffic of SIP based services for all solutions for key issue #4.

Discussion and conclusion:

Noted in parallel session.

TD S2-165605 (P-CR) New solution for key issue #4. (Source: Intel, Huawei, China Unicom).
Abstract: This paper proposes a new solution for key issue #4.

Discussion and conclusion:

Noted in parallel session.

TD S2-165820 (P-CR) Update to solution 4.4. (Source: ZTE).
Abstract: This paper adds the evaluation part to solution 4.4.

Discussion and conclusion:

Not Handled.

TD S2-165821 (P-CR) Update to solution 4.5. (Source: ZTE).
Abstract: This paper adds the evaluation part to solution 4.5.

Discussion and conclusion:

Not Handled.

Evaluations and conclusions

TD S2-165500 (DISCUSSION) Comparison and evaluation of Data Off solutions. (Source: Nokia).
Abstract: This presentation discusses the comparison of the solutions as well as the evaluation, per key Issue.

Discussion and conclusion:

Noted in parallel session.

TD S2-165501 (P-CR) Data Off evaluation and way forward. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This pCR proposes to include the evaluation per key issue and proposes conclusions.

Discussion and conclusion:

LATE DOC: Rx: 11/10, 17:15. Revised in parallel session to TD S2-165951. Revised in parallel session to TD S2-165964. Revised in parallel session to TD S2-166164. Agreed in parallel session. This was block approved.

TD S2-165669 (P-CR) Evaluation of PS data off solutions. (Source: Qualcomm Incorporated).
Abstract: Analyses the solutions for PS data off study proposed so far and proposes a conclusion.

Discussion and conclusion:

Not Handled.

TD S2-165520 (P-CR) Evaluation Criteria. (Source: Ericsson).
Abstract: This document proposes the following evaluation criteria to be completed by all solutions for each key item.

Discussion and conclusion:

Not Handled.

TD S2-165575 (P-CR) Key Issue 1 - conclusions. (Source: BlackBerry UK Ltd).
Abstract: Provides conclusions for key issue 1.

Discussion and conclusion:

Not Handled.

TD S2-165607 (P-CR) Overall evaluation for key issue #1. (Source: Intel).
Abstract: This paper proposes overall evaluation of solutions for key issue #1.

Discussion and conclusion:

Not Handled.

TD S2-165608 (P-CR) Overall evaluation for key issue #2. (Source: Intel).
Abstract: This paper proposes overall evaluation of solutions for key issue #2.

Discussion and conclusion:

Not Handled.

TD S2-165609 (P-CR) Overall evaluation for key issue #3. (Source: Intel).
Abstract: This paper proposes overall evaluation of solutions for key issue #3.

Discussion and conclusion:

Not Handled.

TD S2-165610 (P-CR) Overall evaluation for key issue #4. (Source: Intel).
Abstract: This paper proposes overall evaluation of solutions for key issue #4.

Discussion and conclusion:

Not Handled.

TD S2-165606 (P-CR) Conclusion for 3GPP PS Data Off. (Source: Intel, China Unicom).
Abstract: This paper proposes conclusion for Rel-14 study item FS_PS_Data_Off.

Discussion and conclusion:

Not Handled.

TD S2-165822 (P-CR) Discussion on evaluation criteria for key issue 1. (Source: ZTE).
Abstract: This paper discusses and proposes the evaluation criteria for the key issue 1.

Discussion and conclusion:

Not Handled.

TD S2-165823 (P-CR) Discussion on USSD-based solution for key issue 1. (Source: ZTE).
Abstract: This paper analyzes the USSD-based solution and potential issue for further study.

Discussion and conclusion:

Not Handled.

Outgoing LS

TD S2-165858 (DISCUSSION) DP on Data Off LS to SA WG3. (Source: Deutsche Telekom AG).
Abstract: This DP proposes to send a LS to SA WG3.

Discussion and conclusion:

Not Handled.

TD S2-165861 [DRAFT] LS on PS Data Off function. (Deutsche Telekom AG)
Abstract: LS out to SA WG3.

Discussion and conclusion:

Not Handled.

6.15 Study on extended architecture support for Cellular Internet of Things (FS_CIoT_Ext) and related normative work (CIoT_Ext)

This agenda item was convened by Puneet Jain (Intel).

TD S2-165909 LS from RAN WG2: LS on mobility enhancements for eNB-IoT. (RAN WG2)
Abstract: RAN WG2 has discussed the RRC connection re-establishment and data forwarding of NAS PDUs for CP solution to avoid the data loss during RRC_CONNECTED mode mobility. To support RRC connection re-establishment for NB-IoT CP solution during RRC_CONNECTED mode mobility, UE context retrieval w/o DRB setup from source eNB to target eNB is needed and RAN WG2 would like to ask RAN WG3 to feedback on the feasibility. To provide lossless data transmission in case of RLF using RRC Connection re-establishment during RRC_CONNECTED mode mobility: - RAN WG2 would like RAN WG3, CT WG1, and SA WG2 to confirm that the DL NAS data transport PDUs can be transmitted by the MME to the new eNB when the MME is notified that the UE has accessed via the new eNB, and whether this could be supported by RAN WG3, CT WG1, and SA WG2 specifications. - RAN WG2 would like CT WG1 and SA WG2 to confirm that the UL NAS data transport PDUs can be retransmitted by the UE to the new eNB after the RRC connection re-establishment to the new eNB, and whether this could be supported by CT WG1 and SA WG2 specifications, assuming that AS provides an indication to NAS that the NAS PDU has not been transmitted.
Action: RAN WG2 respectfully asks RAN WG3, CT WG1, and SA WG2 to take the above requirement into consideration, and provide feedback on this.

Parallel comment: SA WG2 will wait for CT WG1 response on this.

Discussion and conclusion:

LATE DOC: Rx 16/10, 11:30. This was postponed to SA WG2 meeting #118.

Key Issue #2

TD S2-165702 (DISCUSSION) Considerations on UE-SCEF reliable communications. (Source: Huawei, HiSilicon, Neul Limited).
Abstract: This contribution elaborates on the evaluation and conclusion for Key Issue 2 (Reliable communication service between UE and SCEF) captured in TR 23.730 and proposed a way forward.

Discussion and conclusion:

Noted in parallel session.

TD S2-165521 (P-CR) Evaluation & Conclusion Key issue #2. (Source: Ericsson).
Abstract: Evaluation & Conclusion Key issue #2.

Discussion and conclusion:

Opened in parallel session. Ericsson commented that only changes to clause 6.5.3.5, 'Other aspects' should be reviewed at this time as the other parts need more off-line discussion. There was an objection to this clause, and it was left for off-line discussion and revised in TD S2-166270 **<RETURN - EMAIL>**

TD S2-165708 (P-CR) Concluding Key Issue 2. (Source: Convida Wireless).
Abstract: A conclusion for Key Issue #2, Reliable communication service between the UE and SCEF.

Discussion and conclusion:

Opened in parallel session. This was postponed to the next meeting.

Key Issue #3

TD S2-165721 (P-CR) Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3. (Source: Qualcomm Incorporated).
Abstract: For dual mode NB-IoT/WB-E-UTRAN UEs, sending the UE WB-E-UTRAN capabilities.

Discussion and conclusion:

Revised in parallel session to TD S2-165972. Revised in parallel session to TD S2-166010. Agreed in parallel session. This was block approved.

TD S2-165973 (LS OUT) [DRAFT] LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT. To: RAN WG2, RAN WG3. Attachment: [S2-165972 or later approved P-CR].

Discussion and conclusion:

Created in parallel session. Revised in parallel session to TD S2-166011.This was left for e-mail approval. e-mail approved. Revised to remove 'draft' in TD S2-166285. Approved.

TD S2-165893 (P-CR) Aspects of Handling of UE WB-E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3. (Source: Vodafone).
Abstract: Following the SA WG2 Telco on CIoT on 2016-10-06, it is anticipated that another company will present a contribution on this topic. This document aims to discuss some additional aspects.

Parallel comment: Will be merged as part of solution 3 in TD S2-165972.

Discussion and conclusion:

Merged with TD S2-165972 into TD S2-165974.

Key Issue #4

TD S2-165722 (P-CR) Solution for Reuse of MBMS - Key issue #4. (Source: Qualcomm Incorporated).
Abstract: Proposes solution options for handling MBMS service particularly for UEs using power saving functions, e.g. eDRX and PSM.

Discussion and conclusion:

Revised in parallel session to TD S2-165974. Agreed in parallel session. This was block approved.

TD S2-165703 (P-CR) Solution on coverage enhancement for multicast. (Source: Huawei, HiSilicon).
Abstract: This paper proposes a solution to support providing efficient multicast transmission to NB-IoT UEs under different coverage levels (Key Issue 4 - Reuse of existing multicast/broadcast architecture).

Parallel comment: SA WG2 will wait for RAN WG2 to progress the work and if SA WG2 needs to do anything it will be triggered by RAN WG2.

Discussion and conclusion:

Noted in parallel session.

TD S2-165709 (P-CR) Concluding Key Issue 4. (Source: Convida Wireless).
Abstract: Abstract of the contribution: A conclusion for Key Issue #4, Reuse of existing multicast/broadcast architecture.

Parallel comment: Remove conclusions.

Discussion and conclusion:

Revised in parallel session to TD S2-165975. Agreed in parallel session. This was block approved.

Key Issue #5

TD S2-165728 (P-CR) Addition of Impacts and Evaluations for Location Services Solutions. (Source: Qualcomm Incorporated).
Abstract: This contribution proposes to add impacts, evaluations and conclusions for solutions in TR 23.730 for support of location for CIoT devices.

Parallel comment: Remove conclusions.

Discussion and conclusion:

Revised in parallel session to TD S2-165976. Revised in parallel session to TD S2-166013. Revised in parallel session to TD S2-166200. Agreed in parallel session. This was block approved.

TD S2-165704 (P-CR) Solution on coverage enhancement for location services. (Source: Huawei, HiSilicon).
Abstract: This contribution proposes one solution with two option for supporting location services for CIoT devices (Key Issue 5).

Discussion and conclusion:

Revised in parallel session to TD S2-165977. Agreed in parallel session. This was block approved.

TD S2-165864 (P-CR) Evaluation & Conclusion Key issue #5. (Source: Ericsson LM).
Abstract: Proposes some evaluations and conclusion for key issue#5 on Reuse of Location Services architecture for Control Plane CIoT EPS optimization.

Discussion and conclusion:

LATE DOC: Withdrawn (not provided).

Key Issue #6

TD S2-165705 (P-CR) Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 1. (Source: Huawei, HiSilicon).
Abstract: This document updates Solution 14 for Key Issue 6 (Inter UE QoS for NB-IoT Control Plane Optimisation).

Discussion and conclusion:

Revised in parallel session to TD S2-165978. Revised in parallel session to TD S2-166014. Agreed in parallel session. This was block approved.

TD S2-165706 (P-CR) Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 2. (Source: Huawei, HiSilicon).
Abstract: This document updates Solution 14 for Key Issue 6 (Inter UE QoS for NB-IoT Control Plane Optimisation).

Discussion and conclusion:

Noted in parallel session.

TD S2-165689 (P-CR) Input to evaluation and conclusion on sol 15 for KI 6. (Source: Ericsson).
Abstract: This contribution provides additional input to evaluation and conclusion of solution 15 for Key Issue 6 - 'Inter UE QoS for NB-IoT Control Plane Optimisation'.

Discussion and conclusion:

Revised in parallel session to TD S2-165981. Revised in parallel session to TD S2-166015. Agreed in parallel session. This was block approved.

TD S2-165755 (P-CR) Solution evaluation and conclusion for Key issue #6 - 'Inter UE QoS for NB-IoT Control Plane Optimisation'. (Source: Qualcomm Incorporated).
Abstract: Proposes solution evaluation and conclusion for the different Solution proposals for Key issue #6.

Discussion and conclusion:

Noted in parallel session.

TD S2-165885 (P-CR) Solution 15 as Conclusion on key Issue#6. (Source: Vodafone).
Abstract: For Key Issue 6 (Inter-UE QoS for NB-IoT Control Plane Optimization) it is recommended to conduct normative work in Release 14. For Key Issue 6, it is recommended to use solution 15 'Inter UE QoS for NB-IoT Control Plane Optimisation by retrieving the UE context from the MME'.

Discussion and conclusion:

Revised in parallel session in TD S2-166016. Agreed in parallel session. This was block approved.

Key Issue #7

TD S2-165905 LS from RAN WG2: Reply LS on overload control for CP CIoT EPS optimization. (RAN WG2)
Abstract: RAN WG2 would like to thank SA WG2 for their LS on overload control for CP CIoT EPS optimization.
RAN WG2 has considered the potential impacts caused by SA WG2 solution 9, and would like to provide the feedback to the following points: RAN WG2: UE needs to indicate to eNB its 'intention for using or preparedness to use' data transfer via Control Plane CIoT EPS optimisation (assuming it is also supported by the network) in one of the RRC messages during the RRC connection establishment. In addition, the eNB needs to be able to indicate to the UE that the extended wait timer in the RRC response is applicable only to CP CIoT data.
This would be applicable also to NB-IoT RRC. Impact on the indication of UE's 'intention for using or preparedness to use' data transfer via Control Plane CIoT EPS optimisation in RRC message: For both non-NB-IoT (WB-E-UTRAN) and NB-IoT, RAN WG2 considers that it is feasible to send the indication of UE's 'intention for using or preparedness to use' data transfer via Control Plane CIoT EPS optimisation in RRC message during the RRC connection establishment.
RAN WG2 has not yet agreed which message can be used. RAN WG2 understands that the indication above would need to be indicated from the NAS layer. Impact on the mechanism for the extended wait timer applicable only to CP CIoT data: For both non-NB-IoT and NB-IoT, the additional mechanism such that the eNB indicates to the UE that the extended wait time is applicable only to CP CIoT data in the RRC message is feasible.
RAN WG2 has not yet agreed how to realize this in detail. RAN WG2 would also like to better understand the use case for introduction of 'intention for using or preparedness to use' value, and if there would be any difference between NB-IoT and CIoT, because the introduction of a new functionality would affect both AS and NAS.
In Rel-13, additional information like cp-CIoT-EPS-optimisation (CIoT only) and up-CIoT-EPS-Optimisation was introduced in RRC Connection Setup Complete message. Those values can also potentially be used to provide better granularity for the overload procedure and can allow the MME to send an overload message to the eNB asking e.g. to release all or a certain percentage of UEs capable of cp-CIoT-EPS-optimisation, regardless such UEs perform the CP CIoT data transmission.
Action: RAN WG2 respectfully asks SA WG2 to take RAN WG2 answers above into account and assist RAN WG2 to better understand the use case behind the proposal.

Discussion and conclusion:

LATE DOC: Rx 16/10, 11:30. Not Handled. Postponed to meeting #118.

TD S2-166057 (LS IN) LS from RAN WG3: Reply LS on overload control for CP CIoT EPS optimization.
Abstract: RAN WG3 thanks SA WG2 for the received LS on overload control for CP CIoT EPS optimization. RAN WG3 has considered the potential impacts raised by SA WG2, and would like to provide the following feedback: Impact on the S1AP Overload Start and Overload Stop message:
Question to RAN WG3: MME needs to send the Overload Start/Stop message to eNB with a new parameter that indicates overload for control plane data so that the eNB can reject RRC connection establishments which indicates intention to use C-Plane CIoT data transfer in the eNB
Answer: The current Overload Start message in S1AP contains the Overload Action IE, which indicates signalling traffic classes that are subject to rejection by the eNB in an MME overload situation.
Therefore, if the Overload Start procedure needs to be enhanced to contain an indication to reject C-Plane CIoT data transfer, the impact on RAN WG3 S1AP would be to include a new Overload Action value in this procedure.
However, the action that can be taken by the eNB depends on which RRC message carries the new indication from the UE (e.g. rejection is only possible if the new indication is carried in msg3).
Also, this solution alone does not prevent all C-Plane CIoT data transfer; for example, in the case where a UE has already established an RRC connection for user plane traffic and then determines to perform C-Plane CIoT data transfer.
Action: RAN WG3 kindly asks SA WG2 and RAN WG2 to take the above considerations into account.

Discussion and conclusion:

Response drafted in TD S2-165982 (withdrawn). Postponed to meeting #118.

TD S2-165982 (LS OUT) Reply LS to RAN WG2 and RAN WG3 on overload control for CP CIoT EPS optimization. -.

Discussion and conclusion:

Created in parallel session. Response to TD S2-166057. This was withdrawn (not provided).

TD S2-165567 (P-CR) CN Overload Control for Control Plane Only PDN Connection. (Source: Intel).
Abstract: This paper analyze the solution 8 & 9 in TR 23.730 for case of Control Plane Only PDN Connection and addresses the related issue.

Discussion and conclusion:

Merged in parallel session with TD S2-166180 into TD S2-166201.

TD S2-165729 (P-CR) Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization. (Source: Qualcomm Incorporated).
Abstract: Discusses whether the MME handles the received CP data during CP service request even when backing off the UE during CP service request, and whether the UE stops the back-off timer when receiving MT CP data.

Discussion and conclusion:

Revised in parallel session to TD S2-165984. Revised in parallel session to TD S2-166180. Revised in parallel session, merging TD S2-165567, in TD S2-166201. Agreed in parallel session. This was block approved.

TD S2-165723 (P-CR) Backward compatibility in CN Overload Control for CP Optimization. (Source: Qualcomm Incorporated).
Abstract: The MME needs to know UE supports Data Over Control Plane back-off timer to enable the feature. If UE does not support it, MME can use other mechanisms like MM/SM back-off timer.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165860 (P-CR) Control Plane back-off timer solutions. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: CIoT NAS Data over control plane back-off timer handling for supporting UEs and non-supporting UEs.

Discussion and conclusion:

Noted in parallel session.

TD S2-165550 (P-CR) CIoT_Correction to KI7 solution 9. (Source: NEC).
Abstract: Proposes a correction to Solution 9 regarding the Exception reporting.

Parallel comment: Offline discussion on changes needed.

Discussion and conclusion:

Revised in parallel session to TD S2-166012. Revised in parallel session to TD S2-166181. Agreed in parallel session. This was block approved.

TD S2-165524 (P-CR) Conclusion solution 9 - Overload Start. (Source: Ericsson).
Abstract: Conclusion solution 9 - Overload Start.

Discussion and conclusion:

Revised in parallel session to TD S2-165985. Revised in parallel session to TD S2-166199. Agreed in parallel session. This was block approved.

Normative work for Key Issue #1

TD S2-165907 LS from RAN WG2: Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures. (RAN WG2)
Abstract: RAN WG2 thanks SA WG2 on their LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures.
On 'SA WG2 kindly asks RAN WG2 to provide feedback on authorization of enhanced coverage from RAN perspective' RAN WG2 wish to provide the following feedback and questions: Companies in RAN WG2 have different understanding of what Enhanced Coverage authorization actually controlled.
Question 1: RAN WG2 would like to understand whether the authorization controls cell selection (PLMN selection), cell reselection or access to a cell only? The following are impacts foreseen for different cases.
Case 1: Enhanced Coverage authorization controls cell selection, e.g. at PLMN selection. - Enhanced Coverage authorization information is used to determine cell suitability criteria. - RAN WG2 assumes that in case access stratum does not find any suitable cell for normal service, upper layers can (as currently) use PLMN selection or RAT selection (where applicable) to find normal service on other PLMNs/RATs.
Case 2: Enhanced Coverage authorization controls cell reselection - Enhanced Coverage authorization information is used to determine cell suitability criteria and non-suitable cells are not taken into account in cell reselection.
For both case 1 and 2, some UEs may be stuck in limited service (non-NB-IoT) or no-service (NB-IoT) state forever due to coverage level is below authorized coverage level (but cell meets all other criteria for normal service).
Question 2: In such a case, how can UE regain normal service? Case 3: Enhanced Coverage authorization controls access (transition from RRC_IDLE to RRC CONNECTED) - Before UE sends RACH it determines if the current coverage level is within authorized coverage level. If current coverage level is below the authorized coverage level UE will not send RACH. - To upper layers the UE will appear in normal service, yet it will not be able to access the network.
Question 3: RAN 2 would like to know, in such a case, what should be the
Action: Taken by AS/NAS? Case 4: Enhanced Coverage authorization controls connected mode, and connected mode mobility - The Source eNB (cell) takes the coverage authorization information into account when deciding to handover a UE to another Target eNB (cell) (applicable to non-NB-IoT). - A UE going below authorized coverage enhancement level may result in RLF (there might be impact to RLF criterion, e.g. for NB-IoT) and/or the connection may be released by the network, for non-NB-IoT.
Question 4: For case 1, 2 & 3 can the UE use the cell for emergency calls (non-NB-IoT) or for mo-ExceptionData (NB-IoT) even if the cell is below the authorized coverage level? On 'SA WG2 also asks RAN WG2 to provide feedback on the usefulness and impacts of using CE level range in the authorization' RAN WG2 wish to provide the following feedback: Here is some background information on the present coverage enhancement specification for non-NB-IoT UE and NB-IoT UE: - In non-NB-IoT, in RRC_CONNECTED, the UE may be configured with one of the following two coverage extended modes called CE mode A and CE mode B. Whereas in RRC_IDLE (for PRACH resource selection), the coverage enhancement is defined by coverage level 0, 1, 2 & 3. CE mode A corresponds to coverage level 0 and 1 while CE mode B corresponds to coverage level 2 and 3. UE only considers itself to be in coverage extended mode (i.e. in coverage level 0, 1, 2, or 3) when it uses coverage extended rules for cell selection, otherwise UE is in normal coverage mode. - In NB-IoT there are up to three repetition levels for PRACH. These could be considered to be coverage levels if configured in similar ways for cells across the network. - The number of repetitions used in a cell for each coverage level is defined through broadcast information and the repetitions used for a coverage level may not be the same across different cells. Authorizing UEs using coverage level value (e.g. 0, 1, 2, 3) is possible but it does not necessarily mean a UE will consume the same amount of resources (e.g. for PRACH) in every cell.
RAN WG2 would like to point out that determination of coverage level is not very precise due to limitations in measurement accuracy, especially at low signal strengths.
Question 5: Considering the above limitation in measurement accuracy in CE, RAN WG2 is wondering whether the CN can set the appropriate coverage authorization level taking into account the radio condition in each cell?
Question 6: Does enhanced coverage authorization apply to UEs that support both NB-IoT and non-NB-IoT?
Question 7: How will the coverage authorization be provided for NB-IoT and non-NB-IoT (e.g. separately or by some mapping in the UE for UEs that support both NB-IoT and non-NB-IoT)?.
Action: RAN WG2 asks SA WG2 to take the above information into account and kindly provide feedback to the questions.

Discussion and conclusion:

LATE DOC: Rx 16/10, 11:30. Response drafted in TD S2-165986. Final response in TD S2-166286.

TD S2-166148 LS from CT WG1: LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures. (CT WG1)
Abstract: CT WG1 thanks SA WG2 on their LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures and the request for feedback. CT WG1 had initial discussion on this topic and would like to provide the corresponding initial feedback:
Enhanced Coverage authorization is not recommended for NB-IoT only UEs.
Regarding the specific impact on the PLMN selection procedure, this would primarily depend on the changes in the underlying AS cell selection/reselection procedures, state machines and states.
CT WG1 is aware of the reply LS by RAN WG2 in R2-167294, which provides further information about the AS impacts.
CT WG1 may provide further feedback after studying the information provided in the LS from RAN WG2.
Action: CT WG1 kindly asks SA WG2 and RAN WG2 to take the above information into consideration.

Discussion and conclusion:

LATE DOC: Rx 20/10, 11:20. Response drafted in TD S2-165986. Final response in TD S2-166286.

TD S2-165986 [DRAFT] Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures. To: RAN WG2, CT WG1.

Discussion and conclusion:

Created in parallel session. Response to TD S2-165907. This was left for e-mail approval. Revision 8 approved. Revised to TD S2-166286. Approved.

TD S2-165568 23.401 CR3135 (Rel-14, 'B'): Authorization of use of Coverage Enhancement. (Source: Intel).
Abstract: Summary of change: Normative Specification for Authorization of use of Coverage Enhancement as per solution 1, and in addition the S1 impacts from solution 4 in TR 23.730.

Discussion and conclusion:

Revised in parallel session to TD S2-165987. This was reviewed and there were a number of outstanding issues with this and it was agreed to take it as a basis for future work. This CR was then postponed.

TD S2-165741 23.060 CR2015 (Rel-14, 'B'): Authorization of use of Coverage Enhancement. (Source: Intel).
Abstract: Summary of change: Normative Specification for Authorization of use of Coverage Enhancement as per solution 1 in TR 23.730.

Discussion and conclusion:

Wrong TS number on CR: Should be 23.060! Revised in parallel session to TD S2-165988. This was reviewed and there were a number of outstanding issues with this and it was agreed to take it as a basis for future work. This CR was then postponed.

TD S2-165571 23.682 CR0235 (Rel-14, 'B'): Support of Enhanced Coverage Authorization Control via SCEF. (Source: Intel).
Abstract: Summary of change: Normative Specification for support for Enhanced Coverage Authorization Control via SCEF by 3rd party service provider as per solution 1 in TR 23.730.

Discussion and conclusion:

Revised in parallel session to TD S2-165989. This was reviewed and there were a number of outstanding issues with this and it was agreed to take it as a basis for future work. This CR was then postponed.

Normative work for Key Issue #2

TD S2-165522 23.401 CR3131 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c). (Source: Ericsson).
Abstract: Summary of change: Between eNB and MME, S1-AP is enhanced to provide acknowledgement of S1-AP messages carrying DL NAS PDU with data. The eNB informs MME of this capability at preceding S1 interaction and eNB only sends acknowledgements when requested by MME (i.e. DoNAS) to avoid excessive signalling for other DL NAS messages (NAS is normally acknowledged end-2-end). Different cause codes are indicated in the NIDD report to the SCEF for acknowledged delivery, unacknowledged delivery and failed delivery for the SCEF to know if the network was capable of a Rel-14 reliable delivery or not. For devices where reliable delivery is not possible, the AS could fallback to less power efficient application level acknowledgement for that device if needed. Between the UE and eNB, clarified the UEs responsibility to retransmit UL data at RLF to achieve reliable hop-by-hop transmission. A typo is corrected in 5.3.4B.3 step correcting 'PGWP-GW Pause of Charging'.

Discussion and conclusion:

Revised in parallel session to TD S2-165992. There were a number of outstanding issues with this and it was agreed to take it as a basis for future work. This CR was then postponed.

TD S2-165523 23.682 CR0234 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c). (Source: Ericsson).
Abstract: Summary of change: Applying reliable hop-by-hop delivery an eNB supporting Rel-14 returns an acknowledgement over S1 if the MT data was delivered or not. A pre-release 14 eNB does not deliver such acknowledgement when successful. Depending on eNB MT data acknowledgement support, the MME returns a cause code to the SCEF that a successful acknowledged or successful unacknowledged delivery has been used. By this the SCEF knows if reliable hop-by-hop delivery has been achieved or not and can notify AS. The AS can then take measures if needed, e.g. fallback to less power efficient application level acknowledgement for that device. Especially for roaming devices, the home operator cannot know the upgrade status of visited operators' radio and core networks.

Discussion and conclusion:

Revised in parallel session to TD S2-165993. There were a number of outstanding issues with this and it was agreed to take it as a basis for future work. This CR was then postponed.

TD S2-165710 23.682 CR0238 (Rel-14, 'B'): CIoT Data Delivery Service. (Source: Convida Wireless).
Abstract: Summary of change: Updated section 4.5.14 Non-IP Data Delivery (NIDD) to say that the data is considered unstructured rather than the 'packet' is unstructured. If the service is enabled, then the packet may have some structure in the sense that it will have a header. Added a new section 4.5.14.1 to define the CIoT Data Delivery Service Feature.

Discussion and conclusion:

Revised in parallel session to TD S2-165994. There were a number of outstanding issues with this and it was agreed to take it as a basis for future work. This CR was then postponed.

Normative work for Key Issue #6

TD S2-165891 23.401 CR3092R1 (Rel-14, 'B'): Inter UE QoS for NB-IoT control plane CIoT EPS optimisation. (Source: Vodafone). (Revision of TD S2-164318).
Abstract: Summary of change: At PDN connection establishment, an NB-IoT capable device is allocated a NB-IoT-Radio-Prioity level by the MME. The UE inserts this in subsequent RRC Connection Establishment signalling so that the eNB can correctly prioritise resource allocation.

Discussion and conclusion:

CR needs to be re-written to version 14.1.0. Not Handled.

Normative work for Key Issue #7

TD S2-165548 23.401 CR3133 (Rel-14, 'B'): CIoT_KI7_sol8 - Control Plane data back-off timer. (Source: NEC).
Abstract: Summary of change: It is proposed to specify in TS 23.401 the Solution 8 (Control Plane data back-off timer) for Key Issue 7 (CN overload control for data transfer via Control Plane CIoT EPS Optimisation).

Discussion and conclusion:

Merged in parallel session with TD S2-165744 into TD S2-165990.

TD S2-165744 23.401 CR3143 (Rel-14, 'B'): Control Plane data back-off timer introduction. (Source: Qualcomm Incorporated).
Abstract: Summary of change: It is proposed to specify in TS 23.401 the Solution 8 (Control Plane data back-off timer) for Key Issue 7 (CN overload control for data transfer via Control Plane CIoT EPS Optimisation).

Discussion and conclusion:

Revised in parallel session, merging TD S2-165548, in TD S2-165990. Revised in parallel session to TD S2-166198. Agreed in parallel session. This was block approved.

TD S2-165525 23.401 CR3132 (Rel-14, 'C'): Overload Start message for control plane data only. (Source: Ericsson).
Abstract: Summary of change: Added new parameter for Overload Start.

Discussion and conclusion:

Merged in parallel session with TD S2-165549 into TD S2-165991.

TD S2-165549 23.401 CR3134 (Rel-14, 'B'): CIoT_KI7_sol9 - Overload Start for control plane data. (Source: NEC).
Abstract: Summary of change: It is proposed to specify in TS 23.401 the Solution 9 (Overload Start message for control plane data only) for Key Issue 7 (CN overload control for data transfer via Control Plane CIoT EPS Optimisation).

Discussion and conclusion:

Revised in parallel session, merging TD S2-165525, in TD S2-165991. Noted in parallel session.

Show of Hands

TD S2-166001 (OTHER) FS_CIoT_Ext: Indicative show of hands. (Source: Rapporteur (Intel)).
Abstract: Slides to discuss issues for an indicative show of hands.

Discussion and conclusion:

Revised in parallel session to TD S2-166002. Revised in parallel session to TD S2-166191. Noted in parallel session.

6.16 Group based enhancements in the network capability exposure functions (GENCEF)

This agenda item was convened by Puneet Jain (Intel).

TD S2-165614 (DISCUSSION) Discussion and evaluation on the solution of GENCEF. (Source: Huawei, HiSilicon).
Abstract: This paper provides further analysis and evaluation to the three options.

Discussion and conclusion:

Not Handled.

TD S2-165613 23.682 CR0236 (Rel-14, 'B'): Using individual SCEF reference ID during the group-based monitoring event configuration procedure. (Source: Huawei, HiSilicon).
Abstract: Summary of change: 1. External Group Id is added in the procedure 2. Pre-configuring the SCEF with number of individual UEs within the group or the HSS provide the list of external IDs for the group to the SCEF. 3.The SCEF allocates SCEF Reference Id to each UE in the group.

Discussion and conclusion:

Not Handled.

TD S2-165731 23.682 CR0239 (Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs. (Source: ZTE).
Abstract: Summary of change: Clause 5.6.1.1: 1. Added statements to the effect that for a Monitoring Request for a group, 'Maximum Number of Reports', and 'Maximum Duration' parameters are applicable for every group member. Clause 5.6.1.2: 1. Added clarifications for the use of various parameters as they relate to group based procedures. Clause 5.6.3.1: 1. Added clarifications to group procedure as they relate to such parameters. Clause 5.6.6.1: 1. Added clarifications for group procedure as they relate to such parameters. Clause 5.6.8.1: 1. Some corrections.

Discussion and conclusion:

Revised in parallel session to TD S2-165980. Revised in parallel session to TD S2-166182. Revised in parallel session to TD S2-166192. Agreed in parallel session. This was block approved.

TD S2-165734 23.682 CR0240 (Rel-14, 'B'): Group monitoring event configuration and reporting for UEs - Solution Option 1A. (Source: ZTE).
Abstract: Summary of change: Clause 5.6.1.1: 1. Added External Group Identifier to the Monitoring Request message and to other associated procedures. 2. Added Guard Time parameter to the associated procedures. 3. Updated the call flow such that the HSS passes Internal ID (IMSI) to External ID/MSISDN mapping to the SCEF Clause 5.6.1.2: 1. Added clarifications for the use of various parameters as they relate to group based procedures. Clause 5.6.3.1: 1. Added clarifications for group procedure. 2. Updated call flow such that the SCEF can request mapping from Internal ID (IMSI) to External ID/MSISDN Clause 5.6.6.1: 1. Updated call flow such that the HSS passes Internal ID (IMSI) to External ID/MSISDN mapping to the SCEF. Clause 5.6.8.1: 1. Added clarifications for group procedure 2. Updated call flow such that the SCEF can request mapping from Internal ID (IMSI) to External ID/MSISDN.

Discussion and conclusion:

Not Handled.

TD S2-165899 23.682 CR0227R3 (Rel-14, 'C'): Group based MONTE Event Configuration via HSS. (Source: Samsung). (Revision of TD S2-165237).
Abstract: Summary of change: 1. External Group Id is added in the procedure 2. Guard time is added in the procedure 3. HSS includes external ID or MSISDN as Monitoring Type parameter to the MME/SGSN in the Insert Subscription Data Request. 4. MME/SGSN includes received user identity in the monitoring report message 5. roaming case is covered.

Discussion and conclusion:

Revision of TD S2-165237 (Technically endorsed at S2#116BIS). LATE DOC: Rx 17/10, 09:15. Revised in parallel session to TD S2-165979. Revised in parallel session to TD S2-166183. Revised in parallel session to TD S2-166193. Agreed in parallel session. This was block approved.

TD S2-166115 LS from RAN WG1: LS on collisions between SC-PTM and Paging in NB-IoT. (RAN WG1)
Abstract: RAN WG1 has discussed collision handling between SC-PTM and paging in NB-IoT. RAN WG1 wish to inform RAN WG2 that there may be cases where the UE cannot monitor NPDCCH search spaces and/or receive NPDSCH transmissions for both paging and SC-PTM simultaneously.
Action: RAN WG1 respectfully ask RAN WG2, RAN WG3 and SA WG2 to take the above into consideration in their work.

Discussion and conclusion:

Not Handled. Postponed to meeting #118.

6.17 Robust Call Setup for VoLTE subscriber in LTE (RobVoLTE)

This topic was not on the agenda for this meeting.

6.18 Study on Enhanced Isolated E-UTRAN Operation for Public Safety (FS_IOPS_LB)

This agenda item was convened by Krisztian Kiss (Apple).

TD S2-165892 (P-CR) New Key Issue: Transition of a E-UTRAN site between full isolation and limited backhaul. (Source: Orange).
Abstract: New Key Issue on Transition of a E-UTRAN site between full isolation and limited backhaul.

Discussion and conclusion:

Revised in parallel session to TD S2-165955. Agreed in parallel session. This was block approved.

TD S2-165894 (P-CR) New Key Issue: Admission of a Public Safety UE not known in the E-UTRAN site. (Source: Orange).
Abstract: New Key Issue on Admission of a Public Safety UE not known in the E-UTRAN site.

Discussion and conclusion:

Revised in parallel session to TD S2-165956. Agreed in parallel session. This was block approved.

TD S2-165896 (P-CR) Solution: IOPS network using the backhaul for authentication only. (Source: Orange).
Abstract: This solution consists in making use of the backhaul for authentication only, in order to limit the traffic on the limited backhaul, while allowing real-time management of the users by the network operator.

Discussion and conclusion:

Revised in parallel session to TD S2-165957. Agreed in parallel session. This was block approved.

6.19 System Architecture Enhancements to eMBMS for TV Video Service (AE_enTV) and related normative work

This topic was not on the agenda for this meeting.

6.20 Non-IP for Cellular Internet of Things for 2G/3G-GPRS (NonIP_GPRS)

This topic was not on the agenda for this meeting.

6.21 Study on Complementary Features for Voice services over WLAN (FS_VoWLAN)

This agenda item was convened by Krisztian Kiss (Apple).

TD S2-165502 (P-CR) TR 23.751 skeleton. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This pCR proposes a skeleton for 23.751.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165503 (P-CR) TR 23.751 scope. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This pCR proposes a scope for 23.751.

Discussion and conclusion:

Agreed in parallel session. This was block approved.

TD S2-165504 (P-CR) New Key Issues on QoS differentiation in the user plane. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper recalls the missing aspects in the current 3GPP Stage 2 specifications for supporting QoS differentiation for trusted and untrusted WLAN, and propose a Key Issue.

Discussion and conclusion:

Revised in parallel session to TD S2-165952. Revised in parallel session to TD S2-166026. which was reviewed and approved.

TD S2-165505 (P-CR) New Key Issue on determining QoS for the uplink traffic. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper discusses whether there are means for the UE to determine the QoS to apply to an IP packet for the uplink, and proposes a Key Issue.

Discussion and conclusion:

Revised in parallel session to TD S2-165953. Revised in parallel session to TD S2-166027. which was reviewed and approved.

TD S2-165506 (P-CR) Solution for User Plane QoS differentiation in untrusted WLAN case. (Source: Nokia, Alcatel-Lucent Shanghai Bell).
Abstract: This paper proposes a solution for supporting QoS differentiation in untrusted WLAN case, based on using IPsec child security associations.

Discussion and conclusion:

Revised in parallel session to TD S2-165954. Revised in parallel session to TD S2-166163. Revised in parallel session to TD S2-166028 which was reviewed and approved.

6.22 T-ADS supporting WLAN Access (TADS_WLAN)

This topic was not on the agenda for this meeting.

6.23 Enhancement to FMSS (eFMSS)

This topic was not on the agenda for this meeting.

6.24 3GPP Packet Access Maintenance - minor corrections

This topic was not on the agenda for this meeting.

6.25 PCC/QoS Maintenance - minor corrections

This topic was not on the agenda for this meeting.

6.26 Non-3GPP Access Maintenance - minor corrections

This topic was not on the agenda for this meeting.

6.27 IMS-Related Maintenance - minor corrections

This topic was not on the agenda for this meeting.

6.28 TEI14 Category B/C - Enhancements and Improvements only (3GPP Packet Access)

This topic was not on the agenda for this meeting.

6.29 TEI14 Category B/C - Enhancements and Improvements only (PCC/QoS)

This topic was not on the agenda for this meeting.

6.30 TEI14 Category B/C - Enhancements and Improvements only (Non-3GPP Access)

This topic was not on the agenda for this meeting.

6.31 TEI14 Category B/C - Enhancements and Improvements only (IMS, IMS-Related, Emergency, Other)

This topic was not on the agenda for this meeting.

7 Project Planning and Management

7.1 New and Revised Work Items, Cover sheets for completed work items

TD S2-165633 (SID NEW) New SID on enhanced VoLTE performance. (Source: Huawei, HiSilicon, China Telecom, Qualcomm Incorporated, China Mobile, China Unicom, T-Mobile USA INC, Telekom Austria AG, TeliaSonera, Intel, AT&T, Telecom Italia).
Abstract: This SID tries to create a study item to figure out the problem that eNB lack of enough information to know the dynamic VoLTE coverage border changes per the used codec and terminal type.

Discussion and conclusion:

T-Mobile commented that if the scope is being expanded then the completion dates should be changed accordingly. Nokia asked why the ME impacts are 'No'. It was agreed that this should be changed to 'Don't know'. It should be clarified that the SRVCC handover avoidance solution from RAN should be evaluated to determine whether architectural support is needed. This was left for further off-line discussion and revised in TD S2-165912 which was reviewed and approved.

TD S2-165634 (DISCUSSION) Discussion for codec dependent triggering of PS Handover. (Source: HUAWEI TECHNOLOGIES CO., LTD).
Abstract: This paper is to trigger discussion for why it is necessary to setup a new SID for Codec dependent triggering of PS Handover.

Discussion and conclusion:

Not Handled.

TD S2-165666 (DISCUSSION) On RAN awareness of codec information. (Source: Qualcomm Incorporated).
Abstract: Identifies benefits for providing RAN awareness of codec information.

Discussion and conclusion:

Not Handled.

TD S2-165673 (SID NEW) Study on Unlicensed spectrum offloading system enhancements. (Source: Qualcomm Incorporated, Intel, KDDI).
Abstract: The study item will focus on:

- Enable the 3GPP system to identify traffic which was transported over unlicensed access in non-roaming and roaming cases
- Ensure the data collected on usage over unlicensed access is sufficient to enable its use for operating purpose (e.g., accounting, charging and charging and network planning).
- Study solutions corresponding to these key issues and propose potential normative work (if required).

Discussion and conclusion:

This was left for further off-line discussion and revised in TD S2-165913 which was reviewed. DOCOMO raised an issue over the third bullet of the objectives. Qualcomm suggested removing this as long as the SID can receive time at the next meeting to discuss whether the scope can be extended to cover this. This was agreed and the SID was revised accordingly in TD S2-166211 which was approved.

TD S2-165701 (SID NEW) New SID on architecture enhancements to ProSe UE-to-Network Relay for Wearables. (Source: Huawei, HiSilicon, LG Electronics, Nokia, Convida Wireless, KPN, Sony).
Abstract: This contribution proposes a new SID on architecture enhancements to ProSe UE-to-Network Relay for Wearables.

Discussion and conclusion:

This was left for further off-line discussion and revised in TD S2-165914 which was reviewed. The WID title had been corrected on advice of MCC to *'New SID on architecture enhancements to ProSe UE-to-Network Relay for Wearables'*. Vodafone needed to be added to the list of supporting companies. Orange asked to remove the examples of Bluetooth and Wi-Fi from the Objectives. This was revised accordingly in TD S2-166212 which was approved.

TD S2-165544 (DISCUSSION) Proposed Way Forward of NextGen for R15. (Source: China Mobile (Rapporteurs)).
Abstract: Discuss for the WI and SI plan of NextGen in R15, including how the R15 WID will be like and the suggested way for the phase 2 SI. The time plan is also proposed. It is used for trigger discussion and collect feedback for the next step.

Discussion and conclusion:

There was some discussion on this and it should be taken into account when reviewing other contributions. This was then noted.

TD S2-165793 (P-CR) Proposed working strategy to organize NextGen normative work. (Source: ZTE).
Abstract: This document proposes a working strategy to organize the NextGen normative work.

Discussion and conclusion:

LATE DOC: Rx 11/10, 19:40. Huawei commented that if each Rapporteur organises conference calls on this there are likely to be very many calls along with the extra face to face meeting time needed and asked how it is intended to handle this. ZTE clarified that this was a first attempt to organise the work and more proposals are welcome. There were further comments and suggestions and this was then noted.

TD S2-165545 (WID NEW) DRAFT Proposed WID for normative work of NextGen in R15. (Source: China Mobile, Nokia).
Abstract: DRAFT WID of NextGen for the WI in R15. It is submitted for reference and discussion, collecting comments and suggestions so that the WID submitted to SA WG2#118 can be approved with less time consuming.

Discussion and conclusion:

Not Handled.

TD S2-165786 (DISCUSSION) Structuring the TS work and phase 2 of the NextGen study. (Source: Huawei, HiSilicon).
Abstract: This contribution proposes a structure for the TS work reflecting the NextGen architecture. It also proposes to organise the further study work on NextGen phase 2.

Discussion and conclusion:

LATE DOC: Rx 16/10, 22:00. Ericsson did not think the best solution is to use many parallel documents for updates. AT&T did not consider the study the bottleneck as some normative work can be done in parallel with ongoing study. InterDigital was in favour of the approach proposed of having smaller documents. ZTE did not think it was ideal to try to coordinate the work with 1-2 Rapporteurs and a large number of editors. There was some further discussion on this and companies were asked to consider this further. this was then noted.

TD S2-165900 (DISCUSSION) Proposed structure of the Rel-15 NextGen work. (Source: Ericsson).
Abstract: Proposes a way forward for the structure of the NextGen work during Rel-15 timeframe.

Discussion and conclusion:

LATE REQ. LATE DOC: Withdrawn (not provided).

TD S2-165901 (WID NEW) New WID: Architecture for Next Generation System. (Source: Ericsson).
Abstract: DRAFT WID for NextGen Rel-15. Submitted for information and discussion to SA WG2#117, with intention to approve the WID at SA WG2#118.

Discussion and conclusion:

LATE REQ. LATE DOC: Rx 17/10, 11:35 Not Handled.

7.2 Review of the Work Plan

There was no work plan review performed at this meeting.

7.3 Planning future meetings

TD S2-165838 (OTHER) Scope of SA WG2#118-bis. (Source: SA WG2 Chairman).
Abstract: This paper proposes to endorse a reduced scope for SA WG2#118-bis.

Discussion and conclusion:

The reduced scope for the next meeting was endorsed. The SA WG2 Chairman will contact the host to arrange a 2-stream meeting for this.

TD S2-166025 (OTHER) Identifying relevant questions for taking conclusions on NG study. (Source: SA WG2 Chairman).
Abstract: This paper suggests endorsing an approach for identifying the relevant questions for taking necessary decisions.

Discussion and conclusion:

It was clarified that this will not preclude raising questions at the next meeting, but it is strongly encouraged to raise all issues and develop questions over e-mail beforehand, so that we can have a good idea of what needs to be decided at the next SA WG2 meeting. This proposal was then endorsed.

Future meeting Calendar:

See: SA WG2 meeting Calendar

TITLE	TYPE	DATES	LOCATION	CTRY
Nov 2016				
3GPPSA2#118	OR	14 - 18 Nov 2016	Reno, Nevada	US
Jan 2017				
3GPPSA2#118-BIS	OR	16 - 20 Jan 2017	USA (TBD)	US
Feb 2017				
3GPPSA2#119	OR	13 - 17 Feb 2017	Dubrovnik (TBC)	HR
Mar 2017				
3GPPSA2#120	OR	27 - 31 Mar 2017	South Korea (TBD)	
May 2017				
3GPPSA2#121	OR	15 - 19 May 2017	China (TBD)	CN
Jun 2017				
3GPPSA2#122	OR	26 - 30 Jun 2017	USA (TBD)	US
Aug 2017				
3GPPSA2#122-BIS	OR	21 - 25 Aug 2017	TBD	
Oct 2017				
3GPPSA2#123	OR	23 - 27 Oct 2017	Ljubljana	SL
Nov 2017				
3GPPSA2#124	OR	27 Nov - 1 Dec 2017	USA (TBD)	US

8 AOB

There were no contributions under this agenda item.

9 Close of the Meeting

The SA WG2 Chairman thanked the hosts for organising this meeting, the Vice Chairmen, the session Convenors and delegates for their hard work and attendance at this meeting. He thanked the MCC Secretary, Maurice Pope, for taking the meeting notes and closed the meeting.

Annex A Summary of Output

A.1 List of meeting documents ordered by TD number

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
2	S2-165473	Agenda	Draft Agenda for SA WG2#117	SA WG2 Chairman	-	-	-	-	-			Approved. The schedule will be updated on the local 'drafts' folder throughout the meeting.	Approved	
3	S2-165474	REPORT	Draft Report of SA WG2 meeting #116BIS	SA WG2 Secretary	-	-	-	-	-			Approved	Approved	
6.1	S2-165475	LS In	LS from RAN WG2: Reply LS on Multiple RoHC Contexts for MMCMH	RAN WG2	-	-	-	-	-	Rel-14	MMCMH_Enh	Revision of S2-164930. Noted in parallel session	Noted	
5.3	S2-165476	LS In	LS from RAN WG2: LS on NBIFOM and steering command	RAN WG2	-	-	-	-	-	Rel-13	LTE_WLAN_radio-Core	Revision of S2-164931. Not Handled. Postponed to meeting #118	Postponed	
6.10	S2-165477	LS In	LS from SA WG1: LS on 5G work alignment	SA WG1	-	-	-	-	-	Rel-15	SMARTER	Revision of S2-164972. Response drafted in S2-165915. Final response in S2-166238.	Replied to	
5.1.1	S2-165478	LS In	LS from ETSI TC LI: LI in the CIoT	ETSI TC LI	-	-	-	-	-		CIoT	Noted in parallel session	Noted	
6.2	S2-165479	LS In	LS from SA WG4: LS on QCI for CLUE Messages	SA WG4	-	-	-	-	-			Response drafted in parallel session in S2-166090. Final response in S2-166287	Replied to	
6.1	S2-165480	LS In	LS from SA WG4: Reply LS on external interface	SA WG4	-	-	-	-	-	Rel-14	FS_AE_enTV	Noted in parallel session	Noted	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			for TV services											
5.1.1	S2-165481	LS In	LS from SA WG5: Reply LS to SA WG2, CT WG4 Response LSs on Control Plane CIoT Optimisation Indicator propagated to PGW for charging purpose	SA WG5	-	-	-	-	-	Rel-13	CIoT	Noted in parallel session	Noted	
5.1.1	S2-165482	LS In	LS from ITU-T JCA-IoT SC&C: LS on recent work by JCA-IoT and SC&C	ITU-T JCA-IoT SC&C	-	-	-	-	-			Noted in parallel session	Noted	
6.10	S2-165483	LS In	LS from TSG SA: Reply LS on Cooperation on NGS FMC	TSG SA	-	-	-	-	-	Rel-14	FS_NextGen	Noted	Noted	
4.1	S2-165484	LS In	LS from TSG SA: Completion of SA WG3-LI Study TR 33.827 on S8HR	TSG SA	-	-	-	-	-	Rel-14	FS_LIV8	Responses drafted in S2-165850 on IMS aspect under AI 6.4 and S2-165882 on SGW aspect under AI 6.1. Final response in S2-166231	Replied to	
6.10.1	S2-165485	DISCUSSION	Recommended principles for network slicing	MediaTek Inc.	-	-	-	-	-	Rel-14		Not Handled	Not Handled	
6.10.18	S2-165486	DISCUSSION	Considerations on voice support in NGS	MediaTek Inc.	-	-	-	-	-	Rel-14		Noted in parallel session	Noted	
6.10	S2-165489	LS In	LS from ITU-R WP 4B: INVITATION TO CONSIDER INTEGRATION OF SATELLITE-BASED SOLUTIONS INTO IMT-2020 NETWORKS	ITU-R WP 4B	-	-	-	-	-			Noted	Noted	
6.13	S2-165490	LS In	LS from RAN WG1: LS on RAN WG1 agreements for	RAN WG1	-	-	-	-	-	Rel-14	LTE_V2X-Core	Noted in parallel session	Noted	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			LTE-based V2X											
6.10	S2-165491	LS In	LS from SA WG3: LS on NG authentication functions	SA WG3	-	-	-	-	-		FS_NSA	Noted	Noted	
6.10	S2-165492	LS In	LS from SA WG3: Update on definitions of identifiers	SA WG3	-	-	-	-	-	Rel-14	FS_NSA	Noted	Noted	
5.3	S2-165493	CR	23.401 CR3130 (Rel-14, 'F'): Corrections for allowing seamless handovers of emergency sessions to WLAN	Nokia, Alcatel-Lucent Shanghai Bell	23.401	3130	-	F	14.1.0	Rel-14	SEW2	Revised in parallel session to S2-165935.	Revised	S2-165935
5.3	S2-165494	CR	23.402 CR2967 (Rel-14, 'F'): Correction of emergency services continuity between WLAN and 3GPP access	Nokia, Alcatel-Lucent Shanghai Bell	23.402	2967	-	F	14.1.0	Rel-14	SEW2	Revised in parallel session to S2-165936.	Revised	S2-165936
6.8	S2-165495	DISCUSSION	Controlling the UP to buffer, drop or duplicate data packets	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-			Noted in parallel session	Noted	
6.8	S2-165496	CR	23.214 CR0001 (Rel-14, 'F'): Controlling the UP to buffer, drop or duplicate data packets	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0001	-	F	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166060.	Revised	S2-166060
6.8	S2-165497	CR	23.214 CR0002 (Rel-14, 'F'): Corrections to User Plane selection function	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0002	-	F	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166064.	Revised	S2-166064
6.8	S2-165498	DISCUSSION	Discussion on buffering in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-			Noted in parallel session	Noted	
6.8	S2-165499	CR	23.214 CR0003 (Rel-14, 'F'): Corrections to buffering in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0003	-	F	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166062.	Revised	S2-166062
6.14	S2-165500	DISCUSSION	Comparison and evaluation of Data Off solutions	Nokia	-	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	

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6.14	S2-165501	P-CR	Data Off evaluation and way forward	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	LATE DOC: Rx: 11/10, 17:15. Revised in parallel session to S2-165951.	Revised	S2-165951
6.21	S2-165502	P-CR	TR 23.751 skeleton	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Agreed in parallel session Block approved	Approved	
6.21	S2-165503	P-CR	TR 23.751 scope	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Agreed in parallel session Block approved	Approved	
6.21	S2-165504	P-CR	New Key Issues on QoS differentiation in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Revised in parallel session to S2-165952.	Revised	S2-165952
6.21	S2-165505	P-CR	New Key Issue on determining QoS for the uplink traffic	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Revised in parallel session to S2-165953.	Revised	S2-165953
6.21	S2-165506	P-CR	Solution for User Plane QoS differentiation in untrusted WLAN case	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Revised in parallel session to S2-165954.	Revised	S2-165954
6.10.4	S2-165507	P-CR	update and evaluation of Solution 4.11 (work task1)	KDDI, ETRI, China Mobile, KPN	23.799	-	-	-	-		FS_NextGen	Merged with S2-165655 into S2-166110	Merged	
6.13	S2-165508	DISCUSSION	V2x message transport mechanism over LTE-Uu reference point	Ericsson	-	-	-	-	-	Rel-14	V2XARC	Noted in parallel session	Noted	
6.13	S2-165509	CR	23.285 CR0001 (Rel-14, 'F'): V2X message handling over LTE Uu	Ericsson	23.285	0001	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166030.	Revised	S2-166030
5.4	S2-165510	CR	23.228 CR1161 (Rel-13, 'F'): Editorial change reflecting IMS being access agnostic	Ericsson	23.228	1161	-	F	13.7.0	Rel-13	TEI13	Revised in parallel session to S2-165937.	Revised	S2-165937

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5.4	S2-165511	CR	23.228 CR1162 (Rel-13, 'F'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1162	-	F	13.7.0	Rel-13	TEI13	Revised in parallel session to S2-165939.	Revised	S2-165939
5.4	S2-165512	CR	23.228 CR1163 (Rel-14, 'A'): Editorial change reflecting IMS being access agnostic	Ericsson	23.228	1163	-	A	14.1.0	Rel-14	TEI14	CR WI Code should be TEI13. Revised in parallel session to S2-165938.	Revised	S2-165938
5.4	S2-165513	CR	23.228 CR1164 (Rel-14, 'A'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1164	-	A	14.1.0	Rel-14	TEI14	CR WI Code should be TEI13. Revised in parallel session to S2-165940.	Revised	S2-165940
6.14	S2-165514	P-CR	New Solution 1.5 for Key issue 1	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165918.	Revised	S2-165918
6.14	S2-165515	P-CR	New Solution 2.5 for Key issue 2	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165925.	Revised	S2-165925
6.14	S2-165516	P-CR	Update to Solution 1.4	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165919.	Revised	S2-165919
6.14	S2-165517	P-CR	Update to Solution 2.3	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Agreed in parallel session Block approved	Approved	
6.14	S2-165518	P-CR	Update to Solution 3.4	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165930.	Revised	S2-165930
6.14	S2-165519	P-CR	Update to Solution 4.4	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165949.	Revised	S2-165949
6.14	S2-165520	P-CR	Evaluation Criteria	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	

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6.15	S2-165521	P-CR	Evaluation & Conclusion Key issue #2	Ericsson	23.730	-	-	-	-		FS_CIoT_Ext	Opened in parallel session. Revised to S2-166270.	Revised	S2-166270
6.15	S2-165522	CR	23.401 CR3131 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c)	Ericsson	23.401	3131	-	C	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session to S2-165992.	Revised	S2-165992
6.15	S2-165523	CR	23.682 CR0234 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c)	Ericsson	23.682	0234	-	C	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session to S2-165993.	Revised	S2-165993
6.15	S2-165524	P-CR	Conclusion solution 9 - Overload Start	Ericsson	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to S2-165985.	Revised	S2-165985
6.15	S2-165525	CR	23.401 CR3132 (Rel-14, 'C'): Overload Start message for control plane data only	Ericsson	23.401	3132	-	C	14.1.0	Rel-14	CIoT_Ext	Merged in parallel session with S2-165549 into S2-165991.	Merged	
6.10.3	S2-165526	P-CR	Clarification of Interim Agreements on Mobility on Demand	Ericsson, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Revised to S2-166083.	Revised	S2-166083
6.10.3	S2-165527	P-CR	Alignment of solution 3.9	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165528	P-CR	Interim agreements on Reachability	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165677, to S2-166082.	Revised	S2-166082
6.10.3	S2-165529	P-CR	Clarifications of Mobility procedure	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165530	P-CR	Clarification of Solution 3.20	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165532	P-CR	Interim Agreements on Mobility Restriction	Ericsson	23.799	-	-	-	-		FS_NextGen	Merged into S2-166085	Merged	
6.10.3	S2-165533	P-CR	Interim Agreements on Mobility Pattern	Ericsson, MediaTek Inc., Sony	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
6.10.10	S2-165534	P-CR	Updates in Policy Reference	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166134.	Revised	S2-166134

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			Architecture to reflect roaming aspects											
6.10.10	S2-165535	P-CR	Discussion on the need to send policies to the UE	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.10	S2-165536	P-CR	Interim agreements on the Policy Framework	Ericsson, ZTE, Oracle	23.799	-	-	-	-		FS_NextGen	Revised to S2-166133.	Revised	S2-166133
6.10.10	S2-165537	P-CR	On the need on an interface between Policy and SDM	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166135.	Revised	S2-166135
6.10.2	S2-165538	P-CR	QoS: Clarifications and updates of solution 2.1	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165539	P-CR	Interim Agreement on Reflective QoS	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165969.	Revised	S2-165969
6.1	S2-165540	DISCUSSION	EPS bearer release for ProSe UE-to-Network Relay	ASUSTeK	-	-	-	-	-	Rel-14	eProSe-Ext-SA2	Moved from 6.28 (not on agenda). Noted in parallel session	Noted	
6.1	S2-165541	CR	23.303 CR0321 (Rel-14, 'C'): EPS bearer release for ProSe UE-to-Network Relay	ASUSTeK	23.303	0321	-	C	14.0.0	Rel-14	eProSe-Ext-SA2	Moved from 6.28 (not on agenda). Revised in parallel session to S2-166019.	Revised	S2-166019
6.10.17	S2-165542	DISCUSSION	A new solution for key issue 17 (introductory slides)	NICT, ATR	-	-	-	-	-	Rel-14	FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165543	DISCUSSION	A new solution for key issue 17 (proposed text)	NICT, ATR	-	-	-	-	-	Rel-14	FS_NextGen	Not Handled	Not Handled	
7.1	S2-165544	DISCUSSION	Proposed Way Forward of NextGen for R15	China Mobile (Rapporteurs)	-	-	-	-	-	Rel-15		Noted	Noted	
7.1	S2-165545	WID new	DRAFT Proposed WID for normative work of NextGen in R15	China Mobile, Nokia	-	-	-	-	-	Rel-15		Not Handled	Not Handled	
6.10.4	S2-165546	P-CR	Update to Solution 4.25: Local Area Data Network	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10	S2-165547	P-CR	Update to Solution	InterDigital	23.799	-	-	-	-		FS_NextGen	Revised to	Revised	S2-166095

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.6			5.1 - Session continuity to enable (re) selection of efficient user plane paths									S2-166095.		
6.15	S2-165548	CR	23.401 CR3133 (Rel-14, 'B'): CIoT_KI7_sol8 - Control Plane data back-off timer	NEC	23.401	3133	-	B	14.1.0	Rel-14	CIoT_Ext	Merged in parallel session with S2-165744 into S2-165990.	Merged	
6.15	S2-165549	CR	23.401 CR3134 (Rel-14, 'B'): CIoT_KI7_sol9 - Overload Start for control plane data	NEC	23.401	3134	-	B	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session, merging S2-165549, to S2-165991.	Revised	S2-165991
6.15	S2-165550	P-CR	CIoT_Correction to KI7 solution 9	NEC	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to S2-166012.	Revised	S2-166012
6.14	S2-165552	P-CR	New extendable solutions with no UE modem and no VPLMN impact for early deployment	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165927.	Revised	S2-165927
5.3	S2-165553	CR	23.161 CR0024 (Rel-13, 'F'): NBIFOM with RAN Controlled WLAN Interworking	Ericsson	23.161	0024	-	F	13.4.0	Rel-13	NBIFOM	Revised in parallel session to S2-165934.	Revised	S2-165934
6.8	S2-165554	CR	23.214 CR0004 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166059.	Revised	S2-166059
6.8	S2-165555	DISCUSSION	CUPS and SDCI interactions	Ericsson	-	-	-	-	-	Rel-14	CUPS	Noted in parallel session	Noted	
6.8	S2-165556	DISCUSSION	Discussion on mandatory support for TEID management and UP buffering	Ericsson	-	-	-	-	-	Rel-14	CUPS	Noted in parallel session	Noted	
6.10.4	S2-165557	P-CR	Solution updates to MM-SM split	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166054.	Revised	S2-166054
6.10.4	S2-165558	P-CR	Updates to solution 6.6.3: Multi-homing over multiple PDU sessions with	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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			network-provided routing rules											
6.10.4	S2-165559	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166049.	Revised	S2-166049
6.10.4	S2-165560	P-CR	Interim conclusions on user plane format	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166111.	Revised	S2-166111
6.10.4	S2-165561	P-CR	Update to Solution 4.18 for Infrequent Small Data	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.8	S2-165562	P-CR	Update to Solution 8.6	Ericsson	23.799	-	-	-	-		FS_NextGen	Merged with S2-165767 into S2-166129	Merged	
6.10.22	S2-165563	P-CR	Next Generation Network Architecture: Soln 3	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.22	S2-165564	P-CR	Next Generation Network Architecture: Soln 6	Ericsson	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.18	S2-165565	P-CR	Input to multiple Key Issues: NextGen core support for IMS	Ericsson, AT&T?	23.799	-	-	-	-		FS_NextGen	Confirm sources		
6.10	S2-165566	LS OUT	LS to GSMA on NextGen Roaming	AT&T	-	-	-	-	-	Rel-14		Revised to S2-165916.	Revised	S2-165916
6.15	S2-165567	P-CR	CN Overload Control for Control Plane Only PDN Connection	Intel	23.730	-	-	-	-		FS_CIoT_Ext	Merged in parallel session with S2-166180 into S2-166201	Merged	
6.15	S2-165568	CR	23.401 CR3135 (Rel-14, 'B'): Authorization of use of Coverage Enhancement	Intel	23.401	3135	-	B	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session to S2-165987.	Revised	S2-165987
6.10.10	S2-165569	P-CR	Discussions and proposals on the considerations of Policy Control Framework for Network Slicing support	ZTE Corporation, Oracle, Telecom Italia, ETRI	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 11/10, 19:40. Revised to S2-166139.	Revised	S2-166139
6.10.1	S2-165570	P-CR	Recommendations to address Network Slicing Solutions design differences	ETRI, ZTE Corporation	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 11/10, 19:40. Not Handled	Not Handled	
6.15	S2-165571	CR	23.682 CR0235	Intel	23.682	0235	-	B	14.1.0	Rel-	CIoT_Ext	Revised in	Revised	S2-165989

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			(Rel-14, 'B'): Support of Enhanced Coverage Authorization Control via SCEF							14		parallel session to S2-165989.		
6.10.1	S2-165572	P-CR	Interim conclusions on Network Slicing	Intel	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.4	S2-165573	LS OUT	[Draft] Additional information on Emergency numbers in IR.21	TELECOM ITALIA S.p.A.	-	-	-	-	-		V8	Response to S2-164307 (already replied to at S2#116BIS in S2-165433). Revised in parallel session to S2-165943.	Revised	S2-165943
6.14	S2-165574	P-CR	Solution for Key issue 1 - Using USSD/USSI and ADD	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165924.	Revised	S2-165924
6.14	S2-165575	P-CR	Key Issue 1 - conclusions	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165576	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165928.	Revised	S2-165928
6.14	S2-165577	P-CR	Key issue 4 solution 4.2 - correction of implementation errors	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Agreed in parallel session Block approved	Approved	
6.14	S2-165578	P-CR	Solution for Key Issue 4 - Control of other SIP based services and non SIP based services	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165950.	Revised	S2-165950
6.10.6	S2-165579	P-CR	Updated Interim Agreements related to selection/reselection of U-plane function	KDDI, Sprint, China Unicom	23.799	-	-	-	-		FS_NextGen	Merged with S2-165889 into S2-166094	Merged	
6.10.1	S2-165580	P-CR	Update to Solution 6.1.2 for Network	InterDigital, ZTE, Telecom Italia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			Slicing											
6.14	S2-165581	P-CR	New solution for key issue #1	Huawei, HiSilicon, Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165922.	Revised	S2-165922
6.14	S2-165582	P-CR	Update on solution 3.3	Huawei, HiSilicon	23.702	-	-	-	-		FS_PS_DATA_OFF	Agreed in parallel session Block approved	Approved	
6.10 .18	S2-165583	P-CR	Update to solution 18.4	China Telecom	23.799	-	-	-	-		FS_NextGen	Agreed in parallel session Block approved	Approved	
6.13	S2-165584	CR	23.285 CR0002 (Rel-14, 'B'): Introducing reliability parameter on PC5 QoS handling	Huawei, HiSilicon	23.285	0002	-	B	14.0.0	Rel-14	V2XARC	Noted in parallel session	Noted	
6.10 .4	S2-165585	P-CR	Interim Agreements on Session Management (Key Issue #4)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166114.	Revised	S2-166114
6.10 .4	S2-165586	P-CR	Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166112.	Revised	S2-166112
6.10 .4	S2-165587	P-CR	Update of Solution 4.13: how to choose which of the UP-GW IP anchors visible to the UE is to be used as the most preferred default router	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10 .4	S2-165588	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166052.	Revised	S2-166052
6.10	S2-165589	P-CR	MM-SM split: SMF	Nokia, Alcatel-	23.799	-	-	-	-		FS_NextGen	Merged with	Merged	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.4			access to subscription data	Lucent Shanghai Bell								S2-165596 into S2-166053		
6.10.6	S2-165590	P-CR	Interim Agreements on Session Management (Key Issue 5 and 6)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165626 and S2-165780, to S2-166086.	Revised	S2-166086
6.10.6	S2-165591	P-CR	Updates to solution 6.6.1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166096.	Revised	S2-166096
6.10.8	S2-165592	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	The Interim agreement part was merged into S2-166126. Revised to S2-166128.	Revised	S2-166128
6.10.18	S2-165593	P-CR	Migration solution with Evolved E-UTRAN to operate EPC and NextGen Core simultaneously	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Revision of S2-164423 from S2#116BIS (Not Handled). Revised to S2-166105.	Revised	S2-166105
6.10.4	S2-165594	P-CR	Principle and Interim agreements on non-3GPP access aspects	LG Electronics	23.799	-	-	-	-		FS_NextGen	Postponed	Postponed	
6.10.4	S2-165595	P-CR	Update of Solution 4.23: Asynchronous Session Management Model	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165596	P-CR	Evaluation on subscription information access in MM-SM split architecture	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165589, to S2-166053.	Revised	S2-166053
6.10.4	S2-165597	P-CR	Clarification and evaluation about solution 4.20 (Session Management on the PDU session(s) via different	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			accesses)											
6.10.4	S2-165598	P-CR	Clarification and evaluation about solution 4.24 (Session Management with individual CP function per access network)	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165599	P-CR	Evaluation of Solution 4.14, 5.2 and 5.4	KDDI, Sprint	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.14	S2-165600	P-CR	New architecture requirement	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165601	P-CR	Key issue #4 update	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165917.	Revised	S2-165917
6.14	S2-165602	P-CR	Update and evaluation for solution #2.2	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165929.	Revised	S2-165929
6.14	S2-165603	P-CR	Update and evaluation for solution #3.2	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165948.	Revised	S2-165948
6.14	S2-165604	P-CR	Update on solutions for key issue #4	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165605	P-CR	New solution for key issue #4	Intel, Huawei, China Unicom	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165606	P-CR	Conclusion for 3GPP PS Data Off	Intel, China Unicom	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165607	P-CR	Overall evaluation for key issue #1	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165608	P-CR	Overall evaluation for key issue #2	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165609	P-CR	Overall evaluation for key issue #3	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165610	P-CR	Overall evaluation for key issue #4	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.10.6	S2-165611	P-CR	Update of enable efficient user plane paths	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165612	P-CR	Update of Multiple Tunnel based traffic offload	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
6.16	S2-165613	CR	23.682 CR0236 (Rel-14, 'C'): Using individual SCEF reference ID during the group-based monitoring event configuration procedure	Huawei, HiSilicon	23.682	0236	-	C	14.1.0	Rel-14	GENCEF	Not Handled	-	
6.16	S2-165614	DISCUSSION	Discussion and evaluation on the solution of GENCEF	Huawei, HiSilicon	-	-	-	-	-	Rel-14	GENCEF	Not Handled	Not Handled	
6.10.1	S2-165615	P-CR	Clarification and evaluation on Solution 1.8	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165616	P-CR	Deprioritizing Group A architecture for network slicing	LG Electronics Inc., SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165617	P-CR	Evaluation on solution 1.3	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165618	P-CR	Evaluation on solution 1.9	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165619	P-CR	Evaluation on solution 1.11	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165620	P-CR	Solution update & evaluation 6.3.23 Two layers Tracking Area handling	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165621	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised to S2-166117.	Revised	S2-166117
6.10.3	S2-165622	P-CR	Interim agreement on mobility management parameters	LG Electronics	23.799	-	-	-	-		FS_NextGen	Merged with S2-165720 into S2-166116	Merged	
6.10.3	S2-165623	P-CR	Solution update & evaluation 6.3.16 Limited & Unlimited UE mobility level	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165624	P-CR	PDU session identification over Multiple Slice	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165625	P-CR	Update on solution 6.6.1	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165626	P-CR	Interim agreement on Session and Service Continuity	LG Electronics	23.799	-	-	-	-		FS_NextGen	Merged with S2-165590 into S2-	Merged	

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												166086.		
6.10.3	S2-165627	P-CR	Solution evaluation 6.3.12 'Solution for UE reachability in power saving state'	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised to S2-166122.	Revised	S2-166122
6.10.3	S2-165628	P-CR	Solution evaluation '6.3.8: Simplified mobility states for stationary UE and MO data transmission only UE'	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165629	P-CR	New solution on 'Mobility framework for non-3GPP access'	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.13	S2-165630	CR	23.285 CR0003 (Rel-14, 'B'): Update of V2X impacts to EPC procedures	Huawei, Hisilicon, LG Electronics	23.285	0003	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166032.	Revised	S2-166032
6.13	S2-165631	CR	23.285 CR0004 (Rel-14, 'B'): Mapping between PPPP and latency for autonomous resources selection mode	Huawei, Hisilicon, LG Electronics, Ericsson	23.285	0004	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166029.	Revised	S2-166029
6.13	S2-165632	CR	23.285 CR0005 (Rel-14, 'F'): Update of Functional entities description	Huawei, Hisilicon	23.285	0005	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166035.	Revised	S2-166035
7.1	S2-165633	SID NEW	New SID on enhanced VoLTE performance	Huawei, HiSilicon, China Telecom, Qualcomm Incorporated, China Mobile, China Unicom, T-Mobile USA INC, Telekom Austria AG, Teliasonera, Intel, AT&T, Telecom Italia	-	-	-	-	-			Revised to S2-165912.	Revised	S2-165912
7.1	S2-165634	DISCUSSION	Discussion for codec dependent triggering of PS Handover	HUAWEI TECHNOLOGIES CO., LTD	-	-	-	-	-			Not Handled	Not Handled	
6.4	S2-165635	CR	23.237 CR0498	Huawei, HiSilicon	23.237	0498	-	F	14.1.0	Rel-	RobVoLTE	Revised in	Revised	S2-165944

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			(Rel-14, 'F'): Robust Call Setup for VoLTE subscriber in LTE							14		parallel session to S2-165944.		
6.13	S2-165636	CR	23.285 CR0006 (Rel-14, 'B'): Subscription to V2X services	LG Electronics	23.285	0006	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166033.	Revised	S2-166033
6.13	S2-165637	CR	23.285 CR0007 (Rel-14, 'F'): Clarification on MBMS for LTE-Uu based V2X architecture reference model	LG Electronics	23.285	0007	-	F	14.0.0	Rel-14	V2XARC	Agreed in parallel session Block approved	Agreed	
6.13	S2-165638	CR	23.285 CR0008 (Rel-14, 'F'): PC5-U stack instance for V2X use	LG Electronics	23.285	0008	-	F	14.0.0	Rel-14	V2XARC	Noted in parallel session	Noted	
6.14	S2-165639	P-CR	New key issue - informing OTT about the UE's status	Alibaba	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.10	S2-165640	P-CR	Correction of implementation error	LG Electronics	23.799	-	-	-	-		FS_NextGen	Approved	Approved	
6.10.1	S2-165641	P-CR	Slice ID usage and clarification	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165642	P-CR	SM and MM decoupling	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Response contribution in S2-165911. Noted in parallel session	Noted	
6.10.7	S2-165643	P-CR	Interim agreements for KI 7	Huawei, HiSilicon, Sprint, CATR	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165810, to S2-166140.	Revised	S2-166140
6.10.7	S2-165644	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revised to S2-166141.	Revised	S2-166141
6.10.22	S2-165645	P-CR	Solution: Consolidated architecture option X	Huawei, Hisilicon, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166170.	Revised	S2-166170
6.10	S2-165646	P-CR	Update the Interim	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Postponed	Postponed	

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.4			agreement on session management and the solution 4.23.											
6.10.10	S2-165647	P-CR	TSSF and Policy	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Agreed in parallel session Block approved	Approved	
6.10.2	S2-165648	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165970.	Revised	S2-165970
6.10.2	S2-165649	P-CR	Update Interim Agreements on Key Issue #2 QoS	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Merged in parallel session with S2-165776 into S2-165968.	Merged	
6.10.8	S2-165650	P-CR	Solution: Standalone non-3GPP access via NG2/NG3	Motorola Mobility, Lenovo, Broadcom, CMCC	23.799	-	-	-	-		FS_NextGen	Revised to S2-166130.	Revised	S2-166130
6.10.22	S2-165651	P-CR	Consolidate overall architecture based on existing architecture options	China Mobile, AT&T, Telecom Italia, Sprint, ZTE, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166017, merging S2-165778.	Revised	S2-166017
6.4	S2-165652	CR	23.292 CR0239 (Rel-14, 'F'): Correction of ICS IWF behaviour for inbound roamers	NEC	23.292	0239	-	F	14.0.0	Rel-14	SeDoC	Revised in parallel session to S2-165923.	Revised	S2-165923
6.10.2	S2-165653	P-CR	Update to Interim agreements on QoS framework - Reflective QoS	China Mobile	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165995.	Revised	S2-165995
6.10.1	S2-165654	P-CR	Evaluation of roaming solution in 6.1.1	Huawei, HiSilicon, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165655	P-CR	Updates of per node-level tunnel model and interim agreement	Huawei, HiSilicon, China Mobile, CATR	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165507 and S2-165751, to S2-166110.	Revised	S2-166110
6.10.4	S2-165656	P-CR	Update of Solution 6.4.19 with evaluation and	Huawei, HiSilicon, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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			update interim agreement											
6.10.18	S2-165657	P-CR	Solution for single radio based lightweight interworking and migration	Huawei	23.799	-	-	-	-		FS_NextGen	Revised to S2-166102. Merged S2-165657 into S2-166100 and S2-166102	Merged	S2-166102
6.10.6	S2-165658	P-CR	Clarification on the UL UP function for traffic branching	China Mobile	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165659	P-CR	update of interim agreements on network slicing solution aspects	China Mobile	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165660	P-CR	clarification of network slice ID in solution 1.6	China Mobile	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.8	S2-165661	DISCUSSION	Functional split for SDCI	Nokia	-	-	-	-	-	Rel-14	CUPS	Noted in parallel session	Noted	
6.8	S2-165662	CR	23.214 CR0005 (Rel-14, 'B'): SDCI support	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0005	-	B	14.0.0	Rel-14	CUPS	Noted in parallel session	Noted	
6.8	S2-165663	CR	23.214 CR0006 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	-	F	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166066.	Revised	S2-166066
6.2	S2-165664	DISCUSSION	SDCI Pull and Push Mode Optimization	Nokia	-	-	-	-	-	Rel-14	SDCI	Noted in parallel session	Noted	
6.2	S2-165665	CR	23.203 CR1067 (Rel-14, 'F'): Optimization for push mode and combination of pull and push mode	Nokia, Alcatel-Lucent Shanghai Bell	23.203	1067	-	F	14.1.0	Rel-14	SDCI	Noted in parallel session	Noted	
7.1	S2-165666	DISCUSSION	On RAN awareness of codec information	Qualcomm Incorporated	-	-	-	-	-	Rel-15		Not Handled	Not Handled	
6.10.18	S2-165667	P-CR	Way forward on EPC-NG Core Interworking	Qualcomm Incorporated, Huawei, Nokia	23.799	-	-	-	-		FS_NextGen	Revised to S2-166104.	Revised	S2-166104
6.10.18	S2-165668	P-CR	Way forward on migration from option 3 to NG Core	Qualcomm Incorporated, Ericsson, NTT Docomo, AT&T,	23.799	-	-	-	-		FS_NextGen	Revised to S2-166106.	Revised	S2-166106

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				MediaTek, KDDI, Rogers Communications Canada, Nokia, KT, Vodafone, Apple									
6.14	S2-165669	P-CR	Evaluation of PS data off solutions	Qualcomm Incorporated	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
5.1.1	S2-165670	CR	23.401 CR3136 (Rel-13, 'F'): Clarifying the UE behaviour for switch to UP	Qualcomm Incorporated	23.401	3136	-	F	13.8.0	Rel-13	CIoT	Noted in parallel session	Noted	
5.1.1	S2-165671	CR	23.401 CR3137 (Rel-14, 'A'): Clarifying the UE behaviour for switch to UP	Qualcomm Incorporated	23.401	3137	-	A	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166003.	Revised	S2-166003
6.10.18	S2-165672	LS OUT	[DRAFT] LS on migration from Option 3 to NextGen Core	Qualcomm Incorporated	-	-	-	-	-	Rel-14		Revised to S2-166107.	Revised	S2-166107
7.1	S2-165673	SID NEW	Study on Unlicensed spectrum offloading system enhancements	Qualcomm Incorporated, Intel, KDDI	-	-	-	-	-	Rel-15		Revised to S2-165913.	Revised	S2-165913
5.1.1	S2-165674	CR	23.401 CR3138 (Rel-13, 'F'): Correction of handling of resume cause	Intel	23.401	3138	-	F	13.8.0	Rel-13	CIoT	Agreed in parallel session Block approved	Agreed	
5.1.1	S2-165675	CR	23.401 CR3139 (Rel-14, 'A'): Correction of handling of resume cause	Intel	23.401	3139	-	A	14.1.0	Rel-14	CIoT	Agreed in parallel session Block approved	Agreed	
6.10.4	S2-165676	P-CR	Interim agreement to use UP for small data transfer	Sony, Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165677	P-CR	Interim agreements to support MO only mode	Sony	23.799	-	-	-	-		FS_NextGen	This was merged with S2-165528 into S2-166082.	Merged	
6.10.3	S2-165678	P-CR	Interim agreements based on solution 6.3.11 and 6.3.21	Sony	23.799	-	-	-	-		FS_NextGen	Merged into S2-166085	Merged	
6.13	S2-165679	CR	23.285 CR0009 (Rel-14, 'B'): Uplink	KPN, LG Electronics	23.285	0009	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel	Revised	S2-166034

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			distribution deployment option									session to S2-166034.		
6.10.8	S2-165680	P-CR	Solution of carrying NAS directly as IKEv2 parameter for untrusted WLAN access	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.8	S2-165681	P-CR	Working assumptions proposal for N3GPP	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Merged into S2-166126	Merged	
6.10.4	S2-165682	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165881, to S2-166108.	Revised	S2-166108
6.10.1	S2-165684	P-CR	Interim Agreements - Network Slicing	Sprint, KDDI, ZTE, Interdigital, Telecom Italia, ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165685	P-CR	Network Discovery and Selection for 3GPP access technologies	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165686	P-CR	Input to solution 5 for KI 2 on Dynamic QoS	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165687	P-CR	Input on RAN Paging and functional division	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165688	P-CR	UE reachability management in Inactive mode	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166121.	Revised	S2-166121
6.15	S2-165689	P-CR	Input to evaluation and conclusion on sol 15 for KI 6	Ericsson	23.730	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165981.	Revised	S2-165981
6.10.1	S2-165690	P-CR	Update of interim agreements on network slicing	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165691	P-CR	Update of Network slicing solution	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.22	S2-165692	P-CR	Update of Consolidated Architecture Option 4	Deutsche Telekom AG	23.799	-	-	-	-		FS_NextGen	Agreed in parallel session Block approved	Approved	
6.10.4	S2-165693	P-CR	Update to Interim Agreements on MM	Deutsche Telekom AG	23.799	-	-	-	-		FS_NextGen	Noted in parallel	Noted	

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			and SM interaction									session		
6.10.22	S2-165694	P-CR	Interim Agreements on Consolidated Architecture Options	Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revised to S2-166018.	Revised	S2-166018
6.10.3	S2-165695	P-CR	New Solution: UE-driven mobility handling during active sessions	Deutsche Telekom, Telecom Italia, SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165696	DISCUSSION	Network slicing way forward	Nokia, ZTE, Telecom Italia, KDDI, Interdigital, SAMSUNG, ETRI, KPN	-	-	-	-	-	Rel-14		Not Handled	Not Handled	
6.10.3	S2-165697	P-CR	Update of Dynamic Mobility Management	Deutsche Telekom, Telecom Italia, BT	23.799	-	-	-	-		FS_NextGen	Revised to S2-166123.	Revised	S2-166123
6.10.1	S2-165698	P-CR	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Nokia, Telecom Italia, ZTE, InterDigital, KDDI, Samsung, ETRI, KPN	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.2	S2-165699	CR	23.203 CR1068 (Rel-14, 'B'): QCI or/and ARP of the Default EPS Bearer change at a certain time on Gx	Verizon, Oracle, Nokia	23.203	1068	-	B	14.1.0	Rel-14	TEI14	Revised in parallel session to S2-166091.	Revised	S2-166091
6.1	S2-165700	CR	23.246 CR0405 (Rel-14, 'F'): Corrections of MBMS Shared Network	Huawei, HiSilicon	23.246	0405	-	F	14.0.0	Rel-14	AE_enTV	Revised in parallel session to S2-166021.	Revised	S2-166021
7.1	S2-165701	SID NEW	New SID on architecture enhancements to ProSe UE-to-Network Relay for Wearables	Huawei, HiSilicon, LG Electronics, Nokia, Convida Wireless, KPN, Sony	-	-	-	-	-			Revised to S2-165914.	Revised	S2-165914
6.15	S2-165702	DISCUSSION	Considerations on UE-SCEF reliable communications	Huawei, HiSilicon, Neul Limited	-	-	-	-	-			Noted in parallel session	Noted	
6.15	S2-165703	P-CR	Solution on coverage enhancement for multicast	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Noted in parallel session	Noted	
6.15	S2-165704	P-CR	Solution on coverage	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Revised in parallel	Revised	S2-165977

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			enhancement for location services									session to S2-165977.		
6.15	S2-165705	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 1	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-165978.	Revised	S2-165978
6.15	S2-165706	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 2	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Noted in parallel session	Noted	
5.1.1	S2-165707	CR	23.682 CR0237 (Rel-14, 'F'): SCEF Behavior when MT NIDD Causes a Trigger	Convida Wireless, Oracle	23.682	0237	-	F	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166007.	Revised	S2-166007
6.15	S2-165708	P-CR	Concluding Key Issue 2	Convida Wireless	23.730	-	-	-	-		CIoT_Ext	Opened in parallel session. This was postponed to the next meeting.	Postponed	
6.15	S2-165709	P-CR	Concluding Key Issue 4	Convida Wireless	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-165975.	Revised	S2-165975
6.15	S2-165710	CR	23.682 CR0238 (Rel-14, 'B'): CIoT Data Delivery Service	Convida Wireless	23.682	0238	-	B	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-165994.	Revised	S2-165994
6.10.8	S2-165711	P-CR	Interim Agreements on common AN-CN interface	Motorola Mobility, Lenovo, Broadcom	23.799	-	-	-	-		FS_NextGen	Revised to S2-166099.	Revised	S2-166099
6.10.10	S2-165712	DISCUSSION	Discussion Paper on NextGen Support of Dynamic Policy Control	U.S. Department of Commerce	-	-	-	-	-	Rel-14	FS_NextGen	Noted in parallel session	Noted	
6.13	S2-165713	CR	23.285 CR0010 (Rel-14, 'F'): Clarification on location mapping at V2X Application Server	Qualcomm Incorporated, Ericsson,	23.285	0010	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166036.	Revised	S2-166036
6.13	S2-165714	CR	23.285 CR0011 (Rel-14, 'F'): Clarification on V2X message reception using MBMS Receive Only Mode	Qualcomm Incorporated,	23.285	0011	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166037.	Revised	S2-166037

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6.10.6	S2-165715	P-CR	UE triggered SSC mode update (update to solution 6.6.1)	Interdigital	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.13	S2-165716	DISCUSSION	USD definitions for V2X communication	Qualcomm Incorporated, xxx	-	-	-	-	-			Source needs correction. Noted in parallel session	Noted	
6.13	S2-165717	CR	23.285 CR0012 (Rel-14, 'F'): Definition of the USD for Uu based V2X communication and V2X Application Server discovery	Qualcomm Incorporated,	23.285	0012	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166031.	Revised	S2-166031
6.10.4	S2-165718	P-CR	Updated interim agreements on session management	NEC, NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Revised to S2-166109.	Revised	S2-166109
6.10.4	S2-165719	P-CR	Updates to Solution 4.22	NEC	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165720	P-CR	Clarifications and proposed way forward on Mobility Management Parameters - Key issue #3	Qualcomm Incorporated, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Parts merged into a consolidated proposal in S2-166085. Further discussed off-line and revised, merging S2-165622, in S2-166116	Revised	S2-166116
6.15	S2-165721	P-CR	Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Qualcomm Incorporated	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-165972.	Revised	S2-165972
6.15	S2-165722	P-CR	Solution for Reuse of MBMS - Key issue #4	Qualcomm Incorporated	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session, merging S2-165893, to S2-165974.	Revised	S2-165974
6.15	S2-165723	P-CR	Backward compatibility in CN	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Agreed in parallel	Approved	

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			Overload Control for CP Optimization									session Block approved		
6.10.1	S2-165724	P-CR	Update of Network Slicing Solution 1.3	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165725	P-CR	Update of Network Slicing definitions	NTT DOCOMO, NEC	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
5.2	S2-165726	CR	23.203 CR1069 (Rel-13, 'F'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1069	-	F	13.9.0	Rel-13	TEI13, MCPTT	No need for TEI13 WI Code. Revised in parallel session to S2-166088.	Revised	S2-166088
5.2	S2-165727	CR	23.203 CR1070 (Rel-14, 'A'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1070	-	A	14.1.0	Rel-14	MCPTT	Revised in parallel session to S2-166089.	Revised	S2-166089
6.15	S2-165728	P-CR	Addition of Impacts and Evaluations for Location Services Solutions	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to S2-165976.	Revised	S2-165976
6.15	S2-165729	P-CR	Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to S2-165984.	Revised	S2-165984
6.10.4	S2-165730	P-CR	Update of solution 4.21 and 4.22 relating to paging	Samsung, ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.16	S2-165731	CR	23.682 CR0239 (Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs	ZTE	23.682	0239	-	C	14.1.0	Rel-14	GENCEF	Revised in parallel session to S2-165980.	Revised	S2-165980
6.10.3	S2-165732	P-CR	Update the solution 6.3.19	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165733	P-CR	Update on solution 4.16: the interaction between MM and SM	Samsung, ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.16	S2-165734	CR	23.682 CR0240 (Rel-14, 'B'): Group monitoring event	ZTE	23.682	0240	-	B	14.1.0	Rel-14	GENCEF	Not Handled	-	

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			configuration and reporting for UEs - Solution Option 1A											
6.10.8	S2-165735	P-CR	Update of Solution 8.3	ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
5.1.1	S2-165736	CR	23.401 CR3140 (Rel-13, 'F'): APN Rate Control and emergency bearer service	HTC	23.401	3140	-	F	13.8.0	Rel-13	CIoT	Revised in parallel session to S2-166004.	Revised	S2-166004
5.1.1	S2-165737	CR	23.401 CR3141 (Rel-14, 'A'): APN rate control and emergency bearer service	HTC	23.401	3141	-	A	14.1.0	Rel-14	CIoT	Revised in parallel session, merging S2-165738, to S2-166005.	Revised	S2-166005
5.1.1	S2-165738	CR	23.401 CR3142 (Rel-14, 'F'): Clarification to the APN rate control procedure	HTC	23.401	3142	-	F	14.1.0	Rel-14	CIoT	Merged with S2-165737 into S2-166005	Merged	
6.10.10	S2-165740	P-CR	solution for enhanced encrypted traffic detection	China Telecom, Alibaba	23.799	-	-	-	-		FS_NextGen	Revised to S2-166136.	Revised	S2-166136
6.15	S2-165741	CR	23.060 CR2015 (Rel-14, 'B'): Authorization of use of Coverage Enhancement	Intel	23.060	2015	-	B	14.1.0	Rel-14	CIoT_Ext	Wrong TS number on CR: Should be 23.060! Revised in parallel session to S2-165988.	Revised	S2-165988
6.10.4	S2-165742	P-CR	Evaluation update of Solution 4.7: Infrequent small data transfer	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165743	P-CR	Updates to Session Continuity Section	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.15	S2-165744	CR	23.401 CR3143 (Rel-14, 'B'): Control Plane data back-off timer introduction	Qualcomm Incorporated	23.401	3143	-	B	14.1.0	Rel-14	CIoT	Revised in parallel session, merging S2-165548, in S2-165990	Revised	S2-165990
6.10.4	S2-165745	P-CR	Evaluation of Solution 4.8: for Data transmission with	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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			ConnectionLess RAN-Core interface											
6.8	S2-165746	CR	23.214 CR0007 (Rel-14, 'C'): Update to UP Selection Section	Samsung	23.214	0007	-	C	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166063.	Revised	S2-166063
6.10.4	S2-165747	P-CR	Evaluation of Solution 4.18: Solution for Infrequent Small Data	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165748	P-CR	Solution update and evaluation of Solution 4.19: Infrequent small user data transfer via control plane	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165749	P-CR	Interim agreement on infrequent small data transmission transferring NextGen system	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.8	S2-165750	CR	23.214 CR0008 (Rel-14, 'C'): Text updates for 3GPP TS 23.401 call flows	Samsung	23.214	0008	-	C	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166068.	Revised	S2-166068
6.10.4	S2-165751	P-CR	Solution update of UP protocol model - Per Node-level Tunnel	LG Electronics	23.799	-	-	-	-		FS_NextGen	Merged with S2-165655 into S2-166110.	Merged	
6.8	S2-165753	CR	23.214 CR0009 (Rel-14, 'C'): Text updates for 3GPP TS 23.402 call flows	Samsung	23.214	0009	-	C	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166069.	Revised	S2-166069
6.10.1	S2-165754	P-CR	Home-routed PDU Session Request Procedure in roaming Network slicing support	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.15	S2-165755	P-CR	Solution evaluation and conclusion for Key issue #6 - 'Inter UE QoS for NB-IoT Control Plane Optimisation'.	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Opened in parallel session. Noted in parallel session	Noted	
6.10	S2-165756	P-CR	Interim Agreements	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.1			for network slicing											
6.10.4	S2-165757	P-CR	Session management for connectionless transmission	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165758	P-CR	Session management for network based ultra-reliable transmission	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
5.1.1	S2-165759	CR	23.682 CR0241 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	-	F	13.7.0	Rel-13	CIoT	Revised in parallel session to S2-166008.	Revised	S2-166008
5.1.1	S2-165760	CR	23.682 CR0242 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	-	A	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166009.	Revised	S2-166009
6.10.3	S2-165761	P-CR	Separation of Mobility levels and Mobility restrictions	Sony, Ericsson, MediaTek Inc, Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Revised to S2-166084.	Revised	S2-166084
6.10.1	S2-165762	P-CR	Way forward on Solutions for Key Issue 1 on Network Slicing	Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165763	P-CR	Additional interim agreements for QoS flow classification	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165996.	Revised	S2-165996
6.10.2	S2-165764	P-CR	Additional interim agreements for QoS establishment	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165997.	Revised	S2-165997
6.10.2	S2-165765	P-CR	Additional interim agreement for QoS on DNN-AMBR	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Merged in parallel session with S2-165776 into S2-165968.	Merged	
6.10.4	S2-165766	P-CR	Way forward on Key Issue 4 on Session Management for WT1 and WT2	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revised to S2-166113.	Revised	S2-166113

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6.10.8	S2-165767	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	The Interim agreement part was merged into S2-166126. Revised, merging S2-165562, to S2-166129.	Revised	S2-166129
6.10.17	S2-165768	P-CR	Update and evaluation of solution 6.17.1 for Key Issue 17 on Network Discovery and Selection in idle mode	Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165769	P-CR	Proposed way forward for Key Issue 17 on Network Discovery and Selection	Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.22	S2-165770	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell, Verizon, Cisco, Samsung, Intel, LGE	23.799	-	-	-	-		FS_NextGen	Revised to S2-166149.	Revised	S2-166149
6.10.10	S2-165771	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166138.	Revised	S2-166138
6.10.7	S2-165772	P-CR	Updates on solution for Control plane interconnection model with a data layer	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera	23.799	-	-	-	-		FS_NextGen	Revised to S2-166142.	Revised	S2-166142
6.10.4	S2-165773	P-CR	Update to Solution 4.16: the interaction between MM and SM	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10	S2-165774	LS IN	LS from ETSI NFV: LS OUT on NFV-based solutions for next generation mobile networks	ETSI NFV	-	-	-	-	-			This LS was postponed to meeting SA WG2#118.	Postponed	
6.10.7	S2-165775	P-CR	Interim agreements for control plane interconnection model	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, Deutsche Telekom, AT&T, Verizon,	23.799	-	-	-	-		FS_NextGen	Revised to S2-166143.	Revised	S2-166143

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				China Mobile, Oracle										
6.10.2	S2-165776	P-CR	Interim agreements for QoS framework	Nokia, Alcatel-Lucent Shanghai Bell, AT&T	23.799	-	-	-	-		FS_NextGen	Revised in parallel session, merging S2-165765and S2-165649, in S2-165968	Revised	S2-165968
6.10.6	S2-165777	P-CR	SSC mode update call flows	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.22	S2-165778	P-CR	Interim agreements on Overall architecture aspects	Nokia	23.799	-	-	-	-		FS_NextGen	Merged with S2-165651 into S2-166017.	Merged	
6.10.3	S2-165779	P-CR	Connected mode MM for multiple parallel sessions	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165780	P-CR	Interim agreement on SSC mode to support Key issue 6	CATT	23.799	-	-	-	-		FS_NextGen	Merged with S2-165590 into S2-166086.	Merged	
6.10.3	S2-165781	P-CR	Enhanced X2-based handover with multiple parallel PDN connections	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165782	P-CR	Some QoS features - Way forward proposal	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.3	S2-165783	P-CR	Intra-RAT Handover procedure	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166124.	Revised	S2-166124
6.10.3	S2-165784	P-CR	TUPF relocation during the HO procedure	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165785	DISCUSSION	Way forward proposal to progress the work on MM	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-		FS_NextGen	Revised to S2-166080.	Revised	S2-166080
7.1	S2-165786	DISCUSSION	Structuring the TS work and phase 2 of the NextGen study	Huawei, HiSilicon	-	-	-	-	-	Rel-15		LATE DOC: Rx 16/10, 22:00. Noted	Noted	
6.10.8	S2-165787	P-CR	Evaluation on Solution 8.5: Alternative C for the interface between UE and	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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			Next Generation Core											
6.10.2	S2-165788	P-CR	Way forward proposal to progress the work on QoS	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	This is a way forward proposal and not a P-CR. Noted in parallel session	Noted	
6.13	S2-165789	DISCUSSION	V2X USD with E-CGI	Nokia	-	-	-	-	-	Rel-14	V2XARC	Noted in parallel session	Noted	
6.10.3	S2-165790	P-CR	Discussion on mobility on demand	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165791	P-CR	Update to interim agreements regarding MM	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
5.4	S2-165792	CR	23.292 CR0234R1 (Rel-13, 'F'): ICS MSC with I2 and T-ADS handling interaction	Nokia	23.292	0234	1	F	13.3.0	Rel-13	TEI13, SAES-CSFB	Merged in parallel session with S2-165818 into S2-165941	Merged	
7.1	S2-165793	P-CR	Proposed working strategy to organize NextGen normative work	ZTE	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 11/10, 19:40. Noted	Noted	
5.4	S2-165794	CR	23.292 CR0240 (Rel-14, 'A'): ICS MSC with I2 and T-ADS handling interaction	Nokia	23.292	0240	-	A	14.0.0	Rel-14	TEI13, SAES-CSFB	Merged in parallel session with S2-165819 into S2-165942	Merged	
6.10.3	S2-165795	P-CR	An alternative to Activate RRC_inactive_connected state	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.4	S2-165796	CR	23.167 CR0305 (Rel-14, 'F'): Update with SEW2 capabilities	Nokia	23.167	0305	-	F	14.1.0	Rel-14	SEW2	Revised in parallel session to S2-165947.	Revised	S2-165947
6.10.1	S2-165797	P-CR	Update to solution 6.1.3	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.4	S2-165798	CR	23.237 CR0499 (Rel-14, 'F'): DRVCC for emergency call with	Nokia	23.237	0499	-	F	14.1.0	Rel-14	SEW2	Agreed in parallel session Block	Agreed	

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			S2a/S2b only									approved		
6.10.6	S2-165799	P-CR	Interim agreement on how the UE determines the SSC mode	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revised to S2-166093.	Revised	S2-166093
6.10.2	S2-165800	P-CR	Interim agreement on reflective QoS	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised in parallel session, merging S2-165653, to S2-165971.	Revised	S2-165971
6.10.7	S2-165801	P-CR	Interim agreements for KI 7	Cisco Systems, Inc., Ericsson	23.799	-	-	-	-		FS_NextGen	Response contribution in S2-165902. Revised to S2-166144.	Revised	S2-166144
6.10.1	S2-165802	P-CR	Interim agreement: Determination of NSSAI based on UE policy	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revised to S2-166098.	Revised	S2-166098
6.10.3	S2-165803	P-CR	NG3-based Handover procedure	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165804	P-CR	Interim Agreements on Mobility Management Behaviours	Samsung	23.799	-	-	-	-		FS_NextGen	Merged into S2-166085	Merged	
6.10.6	S2-165805	P-CR	Update to Solution 5.2	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165806	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165998.	Revised	S2-165998
6.10.22	S2-165807	P-CR	Architecture for concurrent access to same Data Network	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165808	P-CR	Clarification on UE AMBR when MM and SM are split	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165809	P-CR	Clarification on the SSC mode	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.7	S2-165810	P-CR	Clarification on the direct interaction	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Merged with S2-165643 in S2-166140	Merged	
6.10.6	S2-165811	P-CR	Relationship between SSC mode and SM	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Merged with S2-165590 into S2-	Merged	

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			models									166086.		
6.14	S2-165813	P-CR	New solution based on PCO for Key Issue#1	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	Merged in parallel sessions with S2-165581 into S2-165922	Merged	
6.10.3	S2-165814	P-CR	Updated Solution 3.10 for CN Assisted Paging Retry	ETRI	23.799	-	-	-	-		FS_NextGen	Revised to S2-166120.	Revised	S2-166120
6.14	S2-165815	P-CR	New KI#3 solution: Solution using HSS knowledge of PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165931.	Revised	S2-165931
6.14	S2-165816	P-CR	New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165932.	Revised	S2-165932
5.4	S2-165817	DISCUSSION	Discussion on the MT via I2	ZTE	-	-	-	-	-		ICSRA	Noted in parallel session	Noted	
5.4	S2-165818	CR	23.292 CR0241 (Rel-13, 'F'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE	23.292	0241	-	F	13.3.0	Rel-13	TEI13, ICSRA	Revised in parallel session, merging S2-165792, to S2-165941.	Revised	S2-165941
5.4	S2-165819	CR	23.292 CR0242 (Rel-14, 'A'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE	23.292	0242	-	A	14.0.0	Rel-14	TEI13, ICSRA	Revised in parallel session, merging S2-165794, to S2-165942.	Revised	S2-165942
6.14	S2-165820	P-CR	Update to solution 4.4	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165821	P-CR	Update to solution 4.5	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165822	P-CR	Discussion on evaluation criteria for key issue 1	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165823	P-CR	Discussion on USSD-based	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	

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			solution for key issue 1											
6.10.8	S2-165824	P-CR	Some Interim Agreements on KI#8	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166127.	Revised	S2-166127
6.10.3	S2-165825	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	Revised to S2-166119.	Revised	S2-166119
6.10.1	S2-165826	P-CR	Network slice roaming support	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.8	S2-165827	P-CR	Interim agreements on the interface between UE and Next Generation Core	LG Electronics	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.3	S2-165828	P-CR	Update of Solution 6.3.24 Mobility pattern based mobility management	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165829	P-CR	Update of interim agreements on mobility on demand	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
6.10.3	S2-165830	P-CR	Update of solution 6.3.6 and interim agreements for power saving	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised to S2-166081.	Revised	S2-166081
6.10.4	S2-165831	P-CR	Interim agreement on the infrequent small data transferring	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165833	P-CR	Clarification for SM Selection by MM	ETRI, ZTE, Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165834	P-CR	Interim agreements on network slicing	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165835	DISCUSSION	Way forward on NextGen QoS Framework	Intel	-	-	-	-	-			Noted	Noted	
6.10.2	S2-165836	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165967.	Revised	S2-165967
6.10.2	S2-165837	LS OUT	[DRAFT] LS on NextGen QoS interim agreements	Intel	-	-	-	-	-			Revised in parallel session to S2-165999.	Revised	S2-165999
7.3	S2-165838	OTHER	Scope of SA	SA WG2 Chairman	-	-	-	-	-			The reduced	Endorsed	

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			WG2#118-bis									scope for the next meeting was endorsed.		
6.10.3	S2-165839	P-CR	Multiple level Tracking area management and update the interim agreement on mobility management	Huawei, HiSilicon, China Mobile, China Unicom, China Telecom, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166228.	Revised	S2-166228
6.10.18	S2-165840	P-CR	Interim Agreements on Key Issue #18	China Telecom	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 14/10, 08:45. Not Handled	Not Handled	
5.3	S2-165841	CR	23.161 CR0025 (Rel-13, 'F'): Correction related to RAN rules	Intel	23.161	0025	-	F	13.4.0	Rel-13	NBIFOM	Noted in parallel session	Noted	
6.10.1	S2-165842	P-CR	The Granularity of Network Slicing	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165843	P-CR	Evaluation of solution 6.2.2.	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165844	P-CR	Use of DC with Solution 4.10.	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165845	P-CR	Clarifications and evaluation for Per QoS class tunnel protocol model	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165846	P-CR	Reviewing the benefit of Flow based QoS	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.2	S2-165847	P-CR	Additional interim agreements for Key Issues 2 and 4	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.18	S2-165848	P-CR	Multimedia calls fallback from NextGen system to EPS	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.4	S2-165849	CR	23.167 CR0306 (Rel-14, 'F'): Correction from IMPI to IMPU	NTT DOCOMO	23.167	0306	-	F	14.1.0	Rel-14	V8	Revised in parallel session to S2-165945.	Revised	S2-165945
6.4	S2-165850	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Response to S2-165484. Revised in parallel session to S2-165946.	Revised	S2-165946

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6.10.1	S2-165851	P-CR	Update on solution 1.2: Configuration of MDD in the UE for 3rd Party NW Slice	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
5.1.1	S2-165852	CR	23.682 CR0243 (Rel-13, 'F'): Correction of T6a connection establishment parameters	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0243	-	F	13.7.0	Rel-13	CIoT	Left open in parallel session. Noted in parallel session	Noted	
6.10.1	S2-165853	P-CR	Update on solution 1.2: Extending the Slice Type components of an MDD vector	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165854	P-CR	Update of solution 6.5.4.	NTT DOCOMO, ZTE, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
5.1.1	S2-165855	CR	23.682 CR0244 (Rel-14, 'A'): Correction of T6a Connection Establishment parameters	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0244	-	A	14.1.0	Rel-14	CIoT	Left open in parallel session. Noted in parallel session	Noted	
6.10.2	S2-165856	P-CR	Update to 6.2.4 : clarification and solution evaluation	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
5.1.1	S2-165857	CR	23.401 CR3144 (Rel-14, 'F'): Missing indirect forwarding tunnel deletion in TAU with SGW change	Nokia, Alcatel-Lucent Shanghai Bell	23.401	3144	-	F	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166006.	Revised	S2-166006
6.14	S2-165858	DISCUSSION	DP on Data Off LS to SA WG3	Deutsche Telekom AG	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF			
6.1	S2-165859	CR	23.682 CR0245 (Rel-14, 'F'): Active Time correction in UE Power Save Mode	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0245	-	F	14.1.0	Rel-14	TEI14	Revised in parallel session to S2-166022.	Revised	S2-166022
6.15	S2-165860	P-CR	Control Plane back-off timer solutions	Nokia, Alcatel-Lucent Shanghai Bell	23.730	-	-	-	-		FS_CIoT_Ext	Noted in parallel session	Noted	
6.14	S2-165861	LS OUT	[DRAFT] LS on PS Data Off function	Deutsche Telekom AG	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF			
6.10.3	S2-165862	P-CR	Addition of lightweight UE Status Update procedure at NG1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166125.	Revised	S2-166125

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6.10.3	S2-165863	P-CR	Proposed MMF evaluation criteria and MMF conclusions	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
6.15	S2-165864	P-CR	Evaluation & Conclusion Key issue #5	Ericsson LM	23.730	-	-	-	-		FS_CIoT_Ext	LATE DOC: WITHDRAWN (not provided)	Withdrawn	
6.10.4	S2-165865	P-CR	Routing of the SM message	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165866	P-CR	Delete an editor's note in solution 4.21	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.18	S2-165867	P-CR	Update to Solution 18.4	Intel	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165874, to S2-166103.	Revised	S2-166103
6.10.18	S2-165868	P-CR	Updates on interworking and migration solution 18.2: Overall	Nokia, Qualcomm Incorporated, KDDI	23.799	-	-	-	-		FS_NextGen	Revised to S2-166100.	Revised	S2-166100
6.10.18	S2-165869	P-CR	Updates on interworking and migration solution 18.2: Call flows	Nokia, KDDI, Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Revised to S2-166101.	Revised	S2-166101
6.10.17	S2-165870	P-CR	Solution to KI 17: PLMN+RAT discovery and selection	Nokia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165871	P-CR	Interim agreements on KI 17: Network discovery and selection	Nokia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165872	P-CR	RAN triggered FPI change	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165873	P-CR	solution 6.1 update for SSC mode 3	Orange	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.18	S2-165874	P-CR	An NGC/EPC Interworking Solution	Samsung, KT, Telecom Italia, SKT	23.799	-	-	-	-		FS_NextGen	Merged with S2-165867 into S2-166103	Merged	
6.8	S2-165875	CR	23.214 CR0010 (Rel-14, 'B'): Buffering and F-TEIDu Allocation	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	23.214	0010	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166061.	Revised	S2-166061
6.8	S2-165876	DISCUSSION	Discussion on Sx Parameters	Huawei	-	-	-	-	-	Rel-14	CUPS	Noted in parallel	Noted	

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												session		
6.8	S2-165877	CR	23.214 CR0011 (Rel-14, 'B'): Sx Parameters	Huawei, HiSilicon	23.214	0011	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166071.	Revised	S2-166071
6.10.10	S2-165878	P-CR	Policy on RAT/Frequency Selection Priority	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised to S2-166137.	Revised	S2-166137
6.10.1	S2-165879	P-CR	Possible RAN use cases for slicing and other RAN impacts for RAN coordination	Nokia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.8	S2-165880	P-CR	Update to Solution 8.2	Intel	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.22	S2-165881	P-CR	Update to consolidate architecture option 6	BT	23.799	-	-	-	-		FS_NextGen	Merged with S2-165682 into S2-166108	Merged	
6.1	S2-165882	LS OUT	Draft Response LS to 'Completion of SA WG3-LI Study TR 33.827 on S8HR'	Vodafone	-	-	-	-	-	Rel-14		Response to S2-165484. Merged with S2-165850	Merged	
1	S2-165883	OTHER	Welcome to Kaohsiung	TAICS, Mediatek, Chunghwa Telecom, ITRI	-	-	-	-	-			Noted	Noted	
6.10.19	S2-165884	P-CR	Key Issue #19: EPC/NGCN updates for 'virtualisation'	Vodafone	23.799	-	-	-	-		FS_NextGen	Revised to S2-166132.	Revised	S2-166132
6.15	S2-165885	P-CR	Solution 15 as Conclusion on key Issue#6	Vodafone	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-166016.	Revised	S2-166016
6.8	S2-165886	CR	23.214 CR0012 (Rel-14, 'B'): Support of PGW Pause of Charging	Huawei, HiSilicon	23.214	0012	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166067.	Revised	S2-166067
6.8	S2-165887	CR	23.214 CR0013 (Rel-14, 'B'): Sx Session Level Reporting Procedure Update	Huawei, HiSilicon	23.214	0013	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166070.	Revised	S2-166070
6.8	S2-165888	CR	23.214 CR0014 (Rel-14, 'B'): Solution of TDF-U Selection in case of Unsolicited	Huawei, HiSilicon	23.214	0014	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166065.	Revised	S2-166065

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			Reporting											
6.10.6	S2-165889	P-CR	Interim Agreements for KI 6	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised to S2-166094.	Revised	S2-166094
6.10.4	S2-165890	P-CR	Interim Agreements of Key Issue 4	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Postponed	Postponed	
6.15	S2-165891	CR	23.401 CR3092R1 (Rel-14, 'B'): Inter UE QoS for NB-IoT control plane CIoT EPS optimisation	Vodafone	23.401	3092	1	B	14.1.0	Rel-14	CIoT_Ext	CR needs to be re-written to version 14.1.0. Not Handled	-	
6.18	S2-165892	P-CR	New Key Issue: Transition of a E-UTRAN site between full isolation and limited backhaul	Orange	23.799	-	-	-	-		FS_IOPS_LB	Revised in parallel session to S2-165955.	Revised	S2-165955
6.15	S2-165893	P-CR	Aspects of Handling of UE WB-E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Vodafone	23.730	-	-	-	-		FS_CIoT_Ext	Merged with S2-165972 into S2-165974	Merged	
6.18	S2-165894	P-CR	New Key Issue: Admission of a Public Safety UE not known in the E-UTRAN site	Orange	23.798	-	-	-	-		FS_IOPS_LB	Revised in parallel session to S2-165956.	Revised	S2-165956
6.10.8	S2-165895	DISCUSSION	Way forward on accomplishing a single AN-CN interface	Intel	-	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.18	S2-165896	P-CR	Solution: IOPS network using the backhaul for authentication only	Orange	23.798	-	-	-	-		FS_IOPS_LB	Revised in parallel session to S2-165957.	Revised	S2-165957
6.10.1	S2-165897	P-CR	Update to 6.1.3.2 Function description	ITRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165898	P-CR	Update to Solution 6.1.3: Reselection in Common Control Plane Function	ITRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.16	S2-165899	CR	23.682 CR0227R3 (Rel-14, 'C'): Group based MONTE Event Configuration via HSS	Samsung	23.682	0227	3	C	14.1.0	Rel-14	GENCEF	Revision of S2-165237 (Technically endorsed at S2#116BIS). LATE DOC:	Revised	S2-165979

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												Rx 17/10, 09:15. Revised in parallel session to S2-165979.		
7.1	S2-165900	DISCUSSION	Proposed structure of the Rel-15 NextGen work	Ericsson	-	-	-	-	-			LATE REQ. LATE DOC: WITHDRAWN (not provided)	Withdrawn	
7.1	S2-165901	WID NEW	New WID: Architecture for Next Generation System	Ericsson	-	-	-	-	-			LATE REQ. LATE DOC: Rx 17/10, 11:35. Not Handled	Not Handled	
6.10.7	S2-165902	DISCUSSION	Response to 'Interim agreements for KI 7' proposal in S2-165801	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-		FS_NextGen	LATE REQ. LATE DOC: Rx 17/10, 00:50. Not Handled	Not Handled	
6.4	S2-165903	LS In	LS from ETSI STQ: LS on IMS settings for UE testing	ETSI STQ	-	-	-	-	-			LATE DOC: Rx 16/10, 11:00. Not Handled. Postponed to meeting #118.	Postponed	
6.10.1	S2-165904	LS In	LS from NGMN: Update to NGMN Description of Network Slicing Concept	NGMN	-	-	-	-	-			LATE DOC: Rx 16/10, 11:00. Incorrect attachment. Resubmitted in S2-166087.	Withdrawn	S2-166087
6.15	S2-165905	LS In	LS from RAN WG2: Reply LS on overload control for CP CIoT EPS optimization	RAN WG2	-	-	-	-	-	Rel-14	FS_CIoT_Ext	LATE DOC: Rx 16/10, 11:30. Not Handled. Postponed to meeting #118	Postponed	
6.13	S2-165906	LS In	LS from RAN WG2: Response LS on Multiple TMGIs for support of small and variable MBMS areas.	RAN WG2	-	-	-	-	-	Rel-14	LTE_V2X-Core	LATE DOC: Rx 16/10, 11:30. Noted in parallel session	Noted	

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6.15	S2-165907	LS In	LS from RAN WG2: Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	RAN WG2	-	-	-	-	-	Rel-14	FS_CIoT_Ext	LATE DOC: Rx 16/10, 11:30. Response drafted in S2-165986. Final response in S2-166286	Replied to	
6.1	S2-165908	LS In	LS from RAN WG2: LS on The progress and questions for the light connection	RAN WG2	-	-	-	-	-	Rel-14	LTE_LIGHT_CON-Core	LATE DOC: Rx 16/10, 11:30. Not Handled. Postponed to meeting #118	Postponed	
6.15	S2-165909	LS In	LS from RAN WG2: LS on mobility enhancements for eNB-IoT	RAN WG2	-	-	-	-	-	Rel-14	NB_IOTenh-Core	LATE DOC: Rx 16/10, 11:30. This was postponed to SA WG2 meeting #118.	Postponed	
6.10.1	S2-165910	DISCUSSION	Defining the LI Function for Network Slicing Solutions	OTD	-	-	-	-	-		FS_NextGen	LATE REQ. LATE DOC: Rx: 16/10, 11:50. Not Handled	Not Handled	
6.10.4	S2-165911	DISCUSSION	Reply / answer to S2-165642: SM and MM decoupling	Nokia	-	-	-	-	-		FS_NextGen	LATE REQ. LATE DOC: Rx 17/10, 08:20. Not Handled	Not Handled	
7.1	S2-165912	SID NEW	New SID on enhanced VoLTE performance	Huawei, HiSilicon, China Telecom, Qualcomm Incorporated, China Mobile, China Unicom, T-Mobile USA INC, Telekom Austria AG, Teliasonera, Intel, AT&T, Telecom Italia	-	-	-	-	-			Revision of S2-165633. Approved	Approved	
7.1	S2-165913	SID NEW	Study on Unlicensed spectrum offloading system	Qualcomm Incorporated, Intel, KDDI, NEC, Convidia Wireless,	-	-	-	-	-	Rel-15		Revision of S2-165673. Revised to S2-166211.	Revised	S2-166211

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			enhancements	ATT, Nokia										
7.1	S2-165914	SID NEW	New SID on architecture enhancements to ProSe UE-to-Network Relay	Huawei, HiSilicon, Qualcomm Incorporated, LG Electronics, Nokia, Convida Wireless, KPN, Sony, Intel, China Mobile, AT&T, ITRI, Samsung, InterDigital, China Unicom	-	-	-	-	-			Revision of S2-165701. Revised to S2-166212.	Revised	S2-166212
6.10	S2-165915	LS OUT	[DRAFT] LS reply on 5G work alignment	SA WG2	-	-	-	-	-		FS_NextGen, SMARTER	Response to S2-165477. Revised to S2-166238.	Revised	S2-166238
6.10	S2-165916	LS OUT	[DRAFT] LS to GSMA on Next Generation Roaming	SA WG2	-	-	-	-	-	Rel-14		Revision of S2-165566. Revised to S2-166239.	Revised	S2-166239
6.14	S2-165917	P-CR	Key issue #4 update	Intel, Huawei	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165601. Agreed in parallel session Block approved	Approved	
6.14	S2-165918	P-CR	New Solution 1.5 for Key issue 1	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165514. Agreed in parallel session Block approved	Approved	
6.14	S2-165919	P-CR	Update to Solution 1.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165516. Noted in parallel session	Noted	
6.14	S2-165920	P-CR	New solution based on PCO for Key Issue#1	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	WITHDRAWN	Withdrawn	
6.14	S2-165921	LS OUT	[DRAFT] LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Created in parallel session. Revised in parallel session to S2-165926.	Revised	S2-165926

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
6.14	S2-165922	P-CR	New solution for key issue #1	Huawei, HiSilicon, Intel, Nokia, Alcatel-Lucent Shanghai Bell, Orange, Deutsche Telekom, Alibaba	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165581, merging S2-165813. Revised in parallel session to S2-165958.	Revised	S2-165958
6.4	S2-165923	CR	23.292 CR0239R1 (Rel-14, 'F'): Correction of ICS IWF behaviour for inbound roamers	NEC, Deutsche Telekom AG	23.292	0239	1	F	14.0.0	Rel-14	SeDoC	Revision of S2-165652. Agreed in parallel session Block approved	Agreed	
6.14	S2-165924	P-CR	Solution for Key issue 1 - Using USSD/USSI and ADD	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165574. Revised in parallel session to S2-165959.	Revised	S2-165959
6.14	S2-165925	P-CR	New Solution 2.5 for Key issue 2	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165515. Agreed in parallel session Block approved	Approved	
6.14	S2-165926	LS OUT	[DRAFT] LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Revision of S2-165921. Revised in parallel session to S2-165933.	Revised	S2-165933
6.14	S2-165927	P-CR	New extendable solutions for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165552. Revised in parallel session to S2-165960.	Revised	S2-165960
6.14	S2-165928	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165576. Revised in parallel session to S2-165961.	Revised	S2-165961
6.14	S2-165929	P-CR	Update and evaluation for solution #2.2	Intel, Huawei	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165602. Agreed in	Approved	

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												parallel session Block approved		
6.14	S2-165930	P-CR	Update to Solution 3.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165518. Revised in parallel session to S2-165962.	Revised	S2-165962
6.14	S2-165931	P-CR	New KI#3 solution: Solution using HSS knowledge of PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165815. Agreed in parallel session Block approved	Approved	
6.14	S2-165932	P-CR	New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165816. Revised in parallel session to S2-165963.	Revised	S2-165963
6.14	S2-165933	LS OUT	LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Revision of S2-165926. Agreed in parallel session. Revised to S2-166118.	Revised	S2-166118
5.3	S2-165934	CR	23.161 CR0024R1 (Rel-13, 'F'): NBIFOM with RAN Controlled WLAN Interworking	Ericsson, Intel	23.161	0024	1	F	13.4.0	Rel-13	NBIFOM	Revision of S2-165553. Revised in parallel session to S2-166229.	Revised	S2-166229
5.3	S2-165935	CR	23.401 CR3130R1 (Rel-14, 'F'): Corrections for allowing seamless handovers of emergency sessions to WLAN	Nokia, Alcatel-Lucent Shanghai Bell	23.401	3130	1	F	14.1.0	Rel-14	SEW2	Revision of S2-165493. Agreed in parallel session Block approved	Agreed	
5.3	S2-165936	CR	23.402 CR2967R1 (Rel-14, 'F'): Correction of emergency services continuity	Nokia, Alcatel-Lucent Shanghai Bell	23.402	2967	1	F	14.1.0	Rel-14	SEW2	Revision of S2-165494. Revised in parallel session to	Revised	S2-166230

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			between WLAN and 3GPP access									S2-166230.		
5.4	S2-165937	CR	23.228 CR1161R1 (Rel-13, 'F'): Editorial change reflecting IMS being access agnostic	Ericsson	23.228	1161	1	F	13.7.0	Rel-13	TEI13	Revision of S2-165510. Agreed in parallel session Block approved	Agreed	
5.4	S2-165938	CR	23.228 CR1163R1 (Rel-14, 'A'): Editorial change reflecting IMS being access agnostic	Ericsson	23.228	1163	1	A	14.1.0	Rel-14	TEI13	Revision of S2-165512. Agreed in parallel session Block approved	Agreed	
5.4	S2-165939	CR	23.228 CR1162R1 (Rel-13, 'F'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1162	1	F	13.7.0	Rel-13	TEI13	Revision of S2-165511. Agreed in parallel session Block approved	Agreed	
5.4	S2-165940	CR	23.228 CR1164R1 (Rel-14, 'A'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1164	1	A	14.1.0	Rel-14	TEI13	Revision of S2-165513. Agreed in parallel session Block approved	Agreed	
5.4	S2-165941	CR	23.292 CR0241R1 (Rel-13, 'F'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE, Nokia	23.292	0241	1	F	13.3.0	Rel-13	TEI13, ICSRA	Revision of S2-165818, merging S2-165792. Postponed in parallel session	Postponed	
5.4	S2-165942	CR	23.292 CR0242R1 (Rel-14, 'A'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE, Nokia	23.292	0242	1	A	14.0.0	Rel-14	TEI13, ICSRA	Revision of S2-165819, merging S2-165794. Postponed in parallel session	Postponed	
6.4	S2-165943	LS OUT	[Draft] Additional information on Emergency	TELECOM ITALIA S.p.A.	-	-	-	-	-	-	V8	Revision of S2-165573. Revised in	Revised	S2-165966

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			numbers in IR.21									parallel session to S2-165966.		
6.4	S2-165944	CR	23.237 CR0498R1 (Rel-14, 'F'): Robust Call Setup for VoLTE subscriber in LTE	Huawei, HiSilicon	23.237	0498	1	F	14.1.0	Rel-14	RobVoLTE	Revision of S2-165635. Agreed in parallel session Block approved	Agreed	
6.4	S2-165945	CR	23.167 CR0306R1 (Rel-14, 'F'): Correction from IMPI to IMPU	NTT DOCOMO	23.167	0306	1	F	14.1.0	Rel-14	V8	Revision of S2-165849. Agreed in parallel session Block approved	Agreed	
6.4	S2-165946	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Revision of S2-165850. Revised in parallel session to S2-166160.	Revised	S2-166160
6.4	S2-165947	CR	23.167 CR0305R1 (Rel-14, 'F'): Update with SEW2 capabilities	Nokia	23.167	0305	1	F	14.1.0	Rel-14	SEW2	Revision of S2-165796. Agreed in parallel session Block approved	Agreed	
6.14	S2-165948	P-CR	Update and evaluation for solution #3.2	Intel, Huawei	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165603. Agreed in parallel session Block approved	Approved	
6.14	S2-165949	P-CR	Update to Solution 4.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165519. Agreed in parallel session Block approved	Approved	
6.14	S2-165950	P-CR	Solution for Key Issue 4 - Control of other SIP based services and non SIP based services	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165578. WITHDRAWN (not provided)	Withdrawn	

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6.14	S2-165951	P-CR	Data Off evaluation and way forward	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165501. Revised in parallel session to S2-165964.	Revised	S2-165964
6.21	S2-165952	P-CR	New Key Issues on QoS differentiation in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165504. Revised in parallel session to S2-166026.	Revised	S2-166026
6.21	S2-165953	P-CR	New Key Issue on determining QoS for the uplink traffic	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165505. Revised in parallel session to S2-166027.	Revised	S2-166027
6.21	S2-165954	P-CR	Solution for User Plane QoS differentiation in untrusted WLAN case	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165506. Revised in parallel session to S2-166163.	Revised	S2-166163
6.18	S2-165955	P-CR	New Key Issue: Transition of a E-UTRAN site between full isolation and limited backhaul	Orange	23.799	-	-	-	-	-	FS_IOPS_LB	Revision of S2-165892. Agreed in parallel session Block approved	Approved	
6.18	S2-165956	P-CR	Admission of a Public Safety UE not known in the E-UTRAN site	Orange	23.798	-	-	-	-	-	FS_IOPS_LB	Revision of S2-165894. Agreed in parallel session Block approved	Approved	
6.18	S2-165957	P-CR	New solution: IOPS network using the backhaul for authentication only	Orange	23.798	-	-	-	-	-	FS_IOPS_LB	Revision of S2-165896. Agreed in parallel session Block approved	Approved	
6.14	S2-165958	P-CR	New solution for key issue #1	Huawei, HiSilicon, Intel, Nokia, Alcatel-Lucent Shanghai Bell, Orange,	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165922. Agreed in parallel	Approved	

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				Deutsche Telekom, Alibaba								session Block approved		
6.14	S2-165959	P-CR	Solution for Key issue 1 - Using USSD/USSI and ADD	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165924. Agreed in parallel session Block approved	Approved	
6.14	S2-165960	P-CR	New extendable solutions with no UE modem and no VPLMN impact for early deployment	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165927. Revised in parallel session to S2-166161.	Revised	S2-166161
6.14	S2-165961	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165928. Revised in parallel session to S2-165965.	Revised	S2-165965
6.14	S2-165962	P-CR	Update to Solution 3.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165930. Agreed in parallel session Block approved	Approved	
6.14	S2-165963	P-CR	New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165932. Revised in parallel session to S2-166162.	Revised	S2-166162
6.14	S2-165964	P-CR	Data Off way forward	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165951. Revised in parallel session to S2-166164.	Revised	S2-166164
6.14	S2-165965	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165961. Agreed in parallel session Block approved	Approved	

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6.4	S2-165966	LS OUT	Additional information on Emergency numbers in IR.21	SA WG2	-	-	-	-	-	-	V8	Revision of S2-165943. Agreed in parallel session Block approved	Approved	
6.10.2	S2-165967	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165836. Revised in parallel session to S2-166000.	Revised	S2-166000
6.10.2	S2-165968	P-CR	Interim agreements for QoS framework	Nokia, Alcatel-Lucent Shanghai Bell, AT&T	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165776, merging S2-165765 and S2-165649. Revised in parallel session to S2-166185.	Revised	S2-166185
6.10.2	S2-165969	P-CR	Interim Agreement on Reflective QoS	Ericsson	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165539. Revised in parallel session to S2-166186.	Revised	S2-166186
6.10.2	S2-165970	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165648. Revised in parallel session to S2-166187.	Revised	S2-166187
6.10.2	S2-165971	P-CR	Interim agreement on reflective QoS	LG Electronics, China Mobile	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165800. Noted in parallel session	Noted	
6.15	S2-165972	P-CR	Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Qualcomm Incorporated	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165721. Revised in parallel session to S2-166010.	Revised	S2-166010
6.15	S2-165973	LS OUT	[DRAFT] LS on Handling of UE E-UTRAN capabilities when UE is	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Revised in	Revised	S2-166011

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			camping on NB-IoT									parallel session to S2-166011.		
6.15	S2-165974	P-CR	Solution for Reuse of MBMS - Key issue #4	Qualcomm Incorporated	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165722, merging S2-165893. Agreed in parallel session Block approved	Approved	
6.15	S2-165975	P-CR	Concluding Key Issue 4	Convida Wireless	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165709. Agreed in parallel session Block approved	Approved	
6.15	S2-165976	P-CR	Addition of Impacts and Evaluations for Location Services Solutions	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165728. Revised in parallel session to S2-166013.	Revised	S2-166013
6.15	S2-165977	P-CR	Solution on coverage enhancement for location services	Huawei, HiSilicon	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165704. Agreed in parallel session Block approved	Approved	
6.15	S2-165978	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 1	Huawei, HiSilicon	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165705. Revised in parallel session to S2-166014.	Revised	S2-166014
6.16	S2-165979	CR	23.682 CR0227R4 (Rel-14, 'C'): Group based MONTE Event Configuration via HSS	Samsung	23.682	0227	4	C	14.1.0	Rel-14	GENCEF	Revision of S2-165899. Revised in parallel session to S2-166183.	Revised	S2-166183
6.16	S2-165980	CR	23.682 CR0239R1 (Rel-14, 'C'): Enhancements to monitoring event configuration and	ZTE	23.682	0239	1	C	14.1.0	Rel-14	GENCEF	Revision of S2-165731. Revised in parallel session to	Revised	S2-166182

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			reporting procedures for group of UEs									S2-166182.		
6.15	S2-165981	P-CR	Input to evaluation and conclusion on sol 15 for KI 6	Ericsson	23.730	-	-	-	-	-	FS_NextGen	Revision of S2-165689. Revised in parallel session to S2-166015.	Revised	S2-166015
6.15	S2-165982	LS OUT	Reply LS to RAN WG2 and RAN WG3 on overload control for CP CIoT EPS optimization	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Response to S2-166057. WITHDRAWN	Withdrawn	
6.15	S2-165983	P-CR	CN Overload Control for Control Plane Only PDN Connection	Intel	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165567. WITHDRAWN	Withdrawn	
6.15	S2-165984	P-CR	Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165729. Revised in parallel session to S2-166180.	Revised	S2-166180
6.15	S2-165985	P-CR	Conclusion solution 9 - Overload Start	Ericsson	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165524. Revised in parallel session to S2-166199.	Revised	S2-166199
6.15	S2-165986	LS OUT	[DRAFT] Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Response to S2-165907 and S2-166148. This was left for e-mail approval. Revision 8 approved. Revised to S2-166286.	Revised	S2-166286
6.15	S2-165987	CR	23.401 CR3135R1 (Rel-14, 'B'): Authorization of	Intel	23.401	3135	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165568. Postponed	Postponed	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			use of Coverage Enhancement											
6.15	S2-165988	CR	23.060 CR2015R1 (Rel-14, 'B'): Authorization of use of Coverage Enhancement	Intel, Orange	23.060	2015	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165741. Postponed	Postponed	
6.15	S2-165989	CR	23.682 CR0235R1 (Rel-14, 'B'): Support of Enhanced Coverage Authorization Control via SCEF	Intel	23.682	0235	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165571. Postponed	Postponed	
6.15	S2-165990	CR	23.401 CR3143R1 (Rel-14, 'B'): Control Plane data back-off timer introduction	Qualcomm Incorporated, NEC, Intel, Samsung	23.401	3143	1	B	14.1.0	Rel-14	CIoT	Revision of S2-165744, merging S2-165548. Revised in parallel session to S2-166198.	Revised	S2-166198
6.15	S2-165991	CR	23.401 CR3134R1 (Rel-14, 'B'): CIoT_KI7_sol9 - Overload Start for control plane data	NEC	23.401	3134	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165549, merging S2-165525. Noted in parallel session	Noted	
6.15	S2-165992	CR	23.401 CR3131R1 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c)	Ericsson	23.401	3131	1	C	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165522. Postponed	Postponed	
6.15	S2-165993	CR	23.682 CR0234R1 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c)	Ericsson	23.682	0234	1	C	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165523. Postponed	Postponed	
6.15	S2-165994	CR	23.682 CR0238R1 (Rel-14, 'B'): CIoT Data Delivery Service	Convida Wireless	23.682	0238	1	B	14.1.0	Rel-14	CIoT	Revision of S2-165710. Postponed	Postponed	
6.10.2	S2-165995	P-CR	Update to Interim agreements on QoS framework - Reflective QoS	China Mobile	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165653. Noted in parallel session	Noted	
6.10	S2-165996	P-CR	Additional interim	Qualcomm Inc.	23.799	-	-	-	-	-	FS_NextGen	Revision of	Withdrawn	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.2			agreements for QoS flow classification									S2-165763. WITHDRAWN (not provided)		
6.10.2	S2-165997	P-CR	Additional interim agreements for QoS establishment	Qualcomm Inc.	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165764. Revised in parallel session to S2-166188.	Revised	S2-166188
6.10.2	S2-165998	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165806. Revised in parallel session to S2-166189.	Revised	S2-166189
6.10.2	S2-165999	LS OUT	[DRAFT] LS on NextGen QoS interim agreements	Intel	-	-	-	-	-	-	-	Revision of S2-165837. Revised in parallel session to S2-166190.	Revised	S2-166190
6.10.2	S2-166000	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165967. Revised in parallel session to S2-166184.	Revised	S2-166184
6.15	S2-166001	Other	FS_CIoT_Ext: Indicative show of hands	Rapporteur (Intel)	-	-	-	-	-	-	FS_CIoT_Ext	Revised in parallel session to S2-166002.	Revised	S2-166002
6.15	S2-166002	Other	FS_CIoT_Ext: Indicative show of hands	Rapporteur (Intel)	-	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166001. Revised in parallel session to S2-166191.	Revised	S2-166191
5.1.1	S2-166003	CR	23.401 CR3137R1 (Rel-14, 'F'): Clarifying the UE behaviour for switch to UP	Qualcomm Incorporated	23.401	3137	1	F	14.1.0	Rel-14	CIoT	Revision of S2-165671. Agreed in parallel session Block approved	Agreed	
5.1.1	S2-166004	CR	23.401 CR3140R1 (Rel-13, 'F'): APN Rate Control and emergency bearer	HTC	23.401	3140	1	F	13.8.0	Rel-13	CIoT	Revision of S2-165736. Revised in parallel	Revised	S2-166194

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			service									session to S2-166194.		
5.1.1	S2-166005	CR	23.401 CR3141R1 (Rel-14, 'A'): APN rate control and emergency bearer service	HTC	23.401	3141	1	A	14.1.0	Rel-14	CIoT	Revision of S2-165737, merging S2-165738. Agreed in parallel session Block approved	Agreed	
5.1.1	S2-166006	CR	23.401 CR3144R1 (Rel-14, 'F'): Missing indirect forwarding tunnel deletion in TAU with SGW change	Nokia, Alcatel-Lucent Shanghai Bell, Ericsson	23.401	3144	1	F	14.1.0	Rel-14	CIoT	Revision of S2-165857. Revised in parallel session to S2-166197.	Revised	S2-166197
5.1.1	S2-166007	CR	23.682 CR0237R1 (Rel-14, 'F'): SCEF Behavior when MT NIDD Causes a Trigger	Convida Wireless, Oracle	23.682	0237	1	F	14.1.0	Rel-14	CIoT	Revision of S2-165707. Agreed in parallel session Block approved	Agreed	
5.1.1	S2-166008	CR	23.682 CR0241R1 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	1	F	13.7.0	Rel-13	CIoT	Revision of S2-165759. Revised in parallel session to S2-166195.	Revised	S2-166195
5.1.1	S2-166009	CR	23.682 CR0242R1 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	1	A	14.1.0	Rel-14	CIoT	Revision of S2-165760. Revised in parallel session to S2-166196.	Revised	S2-166196
6.15	S2-166010	P-CR	Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Qualcomm Incorporated	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165972. Agreed in parallel session Block approved	Approved	
6.15	S2-166011	LS OUT	[DRAFT] LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT	SA WG2	-	-	-	-	-	-	-	Revision of S2-165973. This was left for e-mail approval. e-mail	Revised	S2-166285

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
												approved. Revised to remove 'draft' in S2-166285		
6.15	S2-166012	P-CR	CIoT_Correction to KI7 solution 9	NEC	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165550. Revised in parallel session to S2-166181.	Revised	S2-166181
6.15	S2-166013	P-CR	Addition of Impacts and Evaluations for Location Services Solutions	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165976. Revised in parallel session to S2-166200.	Revised	S2-166200
6.15	S2-166014	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 1	Huawei, HiSilicon	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165978. Agreed in parallel session Block approved	Approved	
6.15	S2-166015	P-CR	Input to evaluation and conclusion on sol 15 for KI 6	Ericsson	23.730	-	-	-	-	-	FS_NextGen	Revision of S2-165981. Agreed in parallel session Block approved	Approved	
6.15	S2-166016	P-CR	Solution 15 as Conclusion on key Issue#6	Vodafone	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165885. Agreed in parallel session Block approved	Approved	
6.10.22	S2-166017	P-CR	Agreement on the overall architecture	Editor (China Mobile)	23.799	-	-	-	-		FS_NextGen	Revision of S2-165651, merging S2-165778. Revised to S2-166171.	Revised	S2-166171
6.10.22	S2-166018	P-CR	Interim Agreements on Consolidated Architecture Options	Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165694. Principles merged with S2-166171 into S2-	Merged	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
												166265		
6.1	S2-166019	CR	23.303 CR0321R1 (Rel-14, 'A'): EPS bearer release for ProSe UE-to-Network Relay	ASUSTeK	23.303	0321	1	A	14.0.0	Rel-14	eProSe-Ext-SA2	Revision of S2-165541. This CR was agreed	Agreed	
6.1	S2-166020	CR	23.303 CR0322 (Rel-13, 'F'): EPS bearer release for ProSe UE-to-Network Relay	ASUSTeK	23.303	0322	-	F	13.5.0	Rel-13	eProSe-Ext-SA2	Created in parallel session. This CR was agreed	Agreed	
6.1	S2-166021	CR	23.246 CR0405R1 (Rel-14, 'F'): Corrections of MBMS Shared Network	Huawei, HiSilicon	23.246	0405	1	F	14.0.0	Rel-14	AE_enTV	Revision of S2-165700. This CR was agreed	Agreed	
6.1	S2-166022	CR	23.682 CR0245R1 (Rel-14, 'A'): Active Time correction in UE Power Save Mode	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0245	1	A	14.1.0	Rel-14	TEI13	Revision of S2-165859. This CR was agreed	Agreed	
6.1	S2-166023	CR	23.682 CR0246 (Rel-13, 'F'): Active Time correction in UE Power Save Mode	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0246	-	F	13.7.0	Rel-13	TEI13	Created in parallel session. This CR was agreed	Agreed	
6.10.1	S2-166024	DISCUSSION	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Drafting Editor (Nokia)	-	-	-	-	-	-	FS_NextGen	Revision of S2-166097	Not handled.	
7.3	S2-166025	Other	Identifying relevant questions for taking conclusions on NG study	SA WG2 Chairman	-	-	-	-	-	-	-	This proposal was endorsed.	Endorsed	
6.21	S2-166026	P-CR	New Key Issues on QoS differentiation in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165952. Approved	Approved	
6.21	S2-166027	P-CR	New Key Issue on determining QoS for the uplink traffic	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165953. Approved	Approved	
6.21	S2-166028	P-CR	Solution for User Plane QoS differentiation in untrusted WLAN case	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-166163. Approved	Approved	
6.13	S2-166029	CR	23.285 CR0004R1 (Rel-14, 'B'):	Huawei, Hisilicon, LG Electronics,	23.285	0004	1	B	14.0.0	Rel-14	V2XARC	Revision of S2-165631.	Agreed	

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			Mapping between PPPP and latency for autonomous resources selection mode	Ericsson								Agreed in parallel session Block approved		
6.13	S2-166030	CR	23.285 CR0001R1 (Rel-14, 'F'): V2X message handling over LTE Uu	Ericsson	23.285	0001	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165509. Revised in parallel session to S2-166038.	Revised	S2-166038
6.13	S2-166031	CR	23.285 CR0012R1 (Rel-14, 'F'): Definition of the USD for Uu based V2X communication and V2X Application Server discovery	Qualcomm Incorporated	23.285	0012	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165717. Agreed in parallel session Block approved	Agreed	
6.13	S2-166032	CR	23.285 CR0003R1 (Rel-14, 'B'): Update of V2X impacts to EPC procedures	Huawei, Hisilicon, LG Electronics, Ericsson	23.285	0003	1	B	14.0.0	Rel-14	V2XARC	Revision of S2-165630. Agreed in parallel session Block approved	Agreed	
6.13	S2-166033	CR	23.285 CR0006R1 (Rel-14, 'B'): Subscription to V2X services	LG Electronics	23.285	0006	1	B	14.0.0	Rel-14	V2XARC	Revision of S2-165636. Agreed in parallel session Block approved	Agreed	
6.13	S2-166034	CR	23.285 CR0009R1 (Rel-14, 'F'): Uplink distribution deployment option	KPN, LG Electronics	23.285	0009	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165679. Agreed in parallel session Block approved	Agreed	
6.13	S2-166035	CR	23.285 CR0005R1 (Rel-14, 'F'): Update of Functional entities description	Huawei, Hisilicon	23.285	0005	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165632. Revised in parallel session to S2-166039.	Revised	S2-166039
6.13	S2-166036	CR	23.285 CR0010R1 (Rel-14, 'F'): Clarification on	Qualcomm Incorporated, Ericsson,	23.285	0010	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165713. Agreed in	Agreed	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			location mapping at V2X Application Server									parallel session Block approved		
6.13	S2-166037	CR	23.285 CR0011R1 (Rel-14, 'F'): Clarification on V2X message reception using MBMS Receive Only Mode	Qualcomm Incorporated	23.285	0011	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165714. Noted in parallel session	Noted	
6.13	S2-166038	CR	23.285 CR0001R2 (Rel-14, 'F'): V2X message handling over LTE Uu	Ericsson	23.285	0001	2	F	14.0.0	Rel-14	V2XARC	Revision of S2-166030. Agreed in parallel session Block approved	Agreed	
6.13	S2-166039	CR	23.285 CR0005R2 (Rel-14, 'F'): Update of Functional entities description	Huawei, Hisilicon	23.285	0005	2	F	14.0.0	Rel-14	V2XARC	Revision of S2-166035. Agreed in parallel session Block approved	Agreed	
6.10.4	S2-166049	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165559. Revised to S2-166240.	Revised	S2-166240
6.10.22	S2-166050	DISCUSSION	Service-based architecture: What does it mean for NextGen ?	Huawei	-	-	-	-	-		FS_NextGen	Created in drafting session. Not Handled	Not Handled	
6.10.1	S2-166051	DISCUSSION	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Drafting Editor (Nokia)	-	-	-	-	-		FS_NextGen	Created in drafting session. Revised to S2-166097.	Revised	S2-166097
6.10.4	S2-166052	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165588. Revised to S2-166280.	Revised	S2-166280
6.10.4	S2-166053	P-CR	Evaluation on subscription information access	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165596, merging S2-	Approved	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			in MM-SM split architecture									165589. Agreed in parallel session Block approved		
6.10.4	S2-166054	P-CR	Solution updates to MM-SM split	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165557. Agreed in parallel session Block approved	Approved	
6.10.1	S2-166055	DISCUSSION	Observations on Network Slicing Approaches	Qualcomm Inc.	-	-	-	-	-		FS_NextGen	Created at meeting. Not Handled	Not Handled	
6.10.7	S2-166056	DISCUSSION	Reply to S2-165902	Cisco Systems, Inc., Ericsson, NTT DoCoMo, ZTE	-	-	-	-	-		FS_NextGen	Created at meeting. Not Handled	Not Handled	
6.15	S2-166057	LS In	LS from RAN WG3: Reply LS on overload control for CP CIoT EPS optimization	RAN WG3	-	-	-	-	-	Rel-14	FS_CIoT_Ext	Response drafted in S2-165982 (withdrawn). Postponed to meeting #118	Postponed	
4.1	S2-166058	LS In	LS from RAN WG3: LS on Flexible eNB-ID and Cell-ID in E-UTRAN	RAN WG3	-	-	-	-	-	Rel-14	LTE_FNBID-Core	Not Handled. Postponed to meeting #118.	Postponed	
6.8	S2-166059	CR	23.214 CR0004R1 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165554. Revised in parallel session to S2-166177.	Revised	S2-166177
6.8	S2-166060	CR	23.214 CR0001R1 (Rel-14, 'F'): Controlling the UP to buffer, drop or duplicate data packets	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0001	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165496. Revised in parallel session to S2-166176.	Revised	S2-166176
6.8	S2-166061	CR	23.214 CR0010R1 (Rel-14, 'B'): Buffering and F-TEIDu Allocation	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	23.214	0010	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165875. Revised in parallel session to S2-166175.	Revised	S2-166175
6.8	S2-166062	CR	23.214 CR0003R1	Nokia, Alcatel-	23.214	0003	1	F	14.0.0	Rel-	CUPS	Revision of	Revised	S2-166174

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			(Rel-14, 'F'): Corrections to buffering in the user plane	Lucent Shanghai Bell						14		S2-165499. Revised in parallel session to S2-166174.		
6.8	S2-166063	CR	23.214 CR0007R1 (Rel-14, 'C'): Update to UP Selection Section	Samsung	23.214	0007	1	C	14.0.0	Rel-14	CUPS	Revision of S2-165746. Revised in parallel session to S2-166077.	Revised	S2-166077
6.8	S2-166064	CR	23.214 CR0002R1 (Rel-14, 'F'): Corrections to User Plane selection function	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0002	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165497. Revised in parallel session to S2-166078.	Revised	S2-166078
6.8	S2-166065	CR	23.214 CR0014R1 (Rel-14, 'B'): Solution of TDF-U Selection in case of Unsolicited Reporting	Huawei, HiSilicon	23.214	0014	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165888. Revised in parallel session to S2-166076.	Revised	S2-166076
6.8	S2-166066	CR	23.214 CR0006R1 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165663. Revised in parallel session to S2-166178.	Revised	S2-166178
6.8	S2-166067	CR	23.214 CR0012R1 (Rel-14, 'B'): Support of PGW Pause of Charging	Huawei, HiSilicon	23.214	0012	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165886. Revised in parallel session to S2-166075.	Revised	S2-166075
6.8	S2-166068	CR	23.214 CR0008R1 (Rel-14, 'F'): Text updates for 3GPP TS 23.401 call flows	Samsung	23.214	0008	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165750. Revised in parallel session to S2-166074.	Revised	S2-166074
6.8	S2-166069	CR	23.214 CR0009R1 (Rel-14, 'F'): Text updates for 3GPP TS 23.402 call flows	Samsung	23.214	0009	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165753. Revised in parallel session to S2-166073.	Revised	S2-166073
6.8	S2-166070	CR	23.214 CR0013R1 (Rel-14, 'B'): Sx	Huawei, HiSilicon	23.214	0013	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165887.	Revised	S2-166072

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			Session Level Reporting Procedure Update									Revised in parallel session to S2-166072.		
6.8	S2-166071	CR	23.214 CR0011R1 (Rel-14, 'B'): Sx Parameters	Huawei, HiSilicon	23.214	0011	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165877. WITHDRAWN (not provided)	Withdrawn	
6.8	S2-166072	CR	23.214 CR0013R2 (Rel-14, 'F'): Sx Session Level Reporting Procedure Update	Huawei, HiSilicon	23.214	0013	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166070. Agreed in parallel session. Revised to S2-166274.	Revised	S2-166274
6.8	S2-166073	CR	23.214 CR0009R2 (Rel-14, 'F'): Text updates for 3GPP TS 23.402 call flows	Samsung	23.214	0009	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166069. Agreed in parallel session Block approved	Agreed	
6.8	S2-166074	CR	23.214 CR0008R2 (Rel-14, 'F'): Text updates for 3GPP TS 23.401 call flows	Samsung	23.214	0008	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166068. Agreed in parallel session Block approved	Agreed	
6.8	S2-166075	CR	23.214 CR0012R2 (Rel-14, 'F'): Support of PGW Pause of Charging	Huawei, HiSilicon	23.214	0012	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166067. Revised in parallel session to S2-166213.	Revised	S2-166213
6.8	S2-166076	CR	23.214 CR0014R2 (Rel-14, 'F'): Solution of TDF-U Selection in case of Unsolicited Reporting	Huawei, HiSilicon	23.214	0014	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166065. Revised in parallel session to S2-166215.	Revised	S2-166215
6.8	S2-166077	CR	23.214 CR0007R2 (Rel-14, 'F'): Update to UP Selection Section	Samsung	23.214	0007	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166063. Agreed in parallel session Block approved	Agreed	

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6.8	S2-166078	CR	23.214 CR0002R2 (Rel-14, 'F'): Corrections to User Plane selection function	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0002	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166064. Agreed in parallel session Block approved	Agreed	
6.10.1	S2-166079	LS In	LS from NGMN Alliance Project P1: NGMN Paper on Edge Computing	NGMN Alliance Project P1	-	-	-	-	-			LATE DOC: Rx 18/10, 08:00. Not Handled. Postponed to meeting #118.	Postponed	
6.10.3	S2-166080	DISCUSSION	Way forward proposal to progress the work on MM	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-		FS_NextGen	Revision of S2-165785. WITHDRAWN (not provided)	Withdrawn	
6.10.3	S2-166081	P-CR	Update of solution 6.3.6 and interim agreements for power saving	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revision of S2-165830. Revised to S2-166221.	Revised	S2-166221
6.10.3	S2-166082	P-CR	Interim agreements on Reachability	Ericsson, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165528, merging S2-165677. Revised to S2-166220.	Revised	S2-166220
6.10.3	S2-166083	P-CR	Clarification of Interim Agreements on Mobility on Demand	Ericsson, MediaTek Inc., Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165526. Revised to S2-166222.	Revised	S2-166222
6.10.3	S2-166084	P-CR	Separation of Mobility levels and Mobility restrictions	Sony, Ericsson, MediaTek Inc, Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Revision of S2-165761. Agreed in parallel session Block approved	Approved	
6.10.3	S2-166085	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	Editors	23.799	-	-	-	-		FS_NextGen	Created in off-line drafting. Revised to S2-166236.	Revised	S2-166236
6.10.6	S2-166086	P-CR	Interim Agreements on Session Management (Key Issue 5 and 6)	Nokia, Alcatel-Lucent Shanghai Bell, LGE	23.799	-	-	-	-		FS_NextGen	Revision of S2-165590, merging S2-165626, S2-	Revised	S2-166246

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												165780 and S2-165811. Revised to S2-166246.		
6.10.1	S2-166087	LS In	LS from NGMN: Update to NGMN Description of Network Slicing Concept	NGMN	-	-	-	-	-			LATE DOC: Rx 18/10, 11:20. Replacement of S2-165904 with correct attachment (161010 Network Slicing framework v1.0.8.docx). Not Handled. Postponed to meeting #118.	Postponed	
5.2	S2-166088	CR	23.203 CR1069R1 (Rel-13, 'F'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1069	1	F	13.9.0	Rel-13	MCPTT	Revision of S2-165726. Agreed in parallel session Block approved	Agreed	
5.2	S2-166089	CR	23.203 CR1070R1 (Rel-14, 'A'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1070	1	A	14.1.0	Rel-14	MCPTT	Revision of S2-165727. Agreed in parallel session Block approved	Agreed	
6.2	S2-166090	LS OUT	Reply LS on QCI for CLUE Messages	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Response to S2-165479. This was left for e-mail approval. Revision 1 approved. Revised to S2-166287.	Revised	S2-166287
6.2	S2-166091	CR	23.203 CR1068R1 (Rel-14, 'B'): QCI or/and ARP of the	Verizon, Oracle, Nokia	23.203	1068	1	B	14.1.0	Rel-14	TEI14	Revision of S2-165699. WITHDRAW	Withdrawn	

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			Default EPS Bearer change at a certain time on Gx									N (not provided)		
6.10.6	S2-166093	P-CR	Interim agreement on how the UE determines the SSC mode	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revision of S2-165799. Revised to S2-166247.	Revised	S2-166247
6.10.6	S2-166094	P-CR	Interim Agreements for KI 6	Huawei, HiSilicon, KDDI, Sprint	23.799	-	-	-	-		FS_NextGen	Revision of S2-165889, merging S2-165579. Revised to S2-166248.	Revised	S2-166248
6.10.6	S2-166095	P-CR	Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths	InterDigital	23.799	-	-	-	-		FS_NextGen	Revision of S2-165547. Error in uploaded document. Revised in S2-166235.	Revised	S2-166235
6.10.6	S2-166096	P-CR	Updates to solution 6.6.1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165591. Revised to S2-166250.	Revised	S2-166250
6.10.1	S2-166097	DISCUSSION	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Drafting Editor (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166051. Revised in drafting session to S2-166024.	Revised	S2-166024
6.10.1	S2-166098	P-CR	Interim agreement: Determination of NSSAI based on UE policy	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revision of S2-165802. WITHDRAWN (not provided)	Withdrawn	
6.10.8	S2-166099	P-CR	Interim Agreements on common AN-CN interface	Motorola Mobility, Lenovo, Broadcom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165711. Revised to S2-166126.	Revised	S2-166126
6.10.18	S2-166100	P-CR	Updates on interworking and migration solution 18.2: Overall	Nokia, Qualcomm Incorporated, KDDI, Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165868. Approved	Approved	
6.10.18	S2-166101	P-CR	Updates on interworking and migration solution 18.2: Call flows	Nokia, KDDI, Qualcomm Incorporated, Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165869. Approved	Approved	
6.10.18	S2-166102	P-CR	Solution for single radio based	Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165657. It	Withdrawn	

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			lightweight interworking and migration									was decided to merge S2-165657 into S2-166100 and S2-166102 and S2-166102 was withdrawn.		
6.10.18	S2-166103	P-CR	Update to Solution 18.4	Intel, Samsung	23.799	-	-	-	-		FS_NextGen	Revision of S2-165867, merging S2-165874. Revised to S2-166261.	Revised	S2-166261
6.10.18	S2-166104	P-CR	Way forward on EPC-NG Core Interworking	Qualcomm Incorporated, Huawei, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165667. Revised to S2-166263.	Revised	S2-166263
6.10.18	S2-166105	P-CR	Migration solution with Evolved E-UTRAN to operate EPC and NextGen Core simultaneously	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165593. Revised to S2-166262.	Revised	S2-166262
6.10.18	S2-166106	P-CR	Way forward on migration from option 3 to NG Core	Qualcomm Incorporated, Ericsson, NTT Docomo, AT&T, MediaTek, KDDI, Rogers Communications Canada, Nokia, KT, Vodafone, Apple	23.799	-	-	-	-		FS_NextGen	Revision of S2-165668. Approved	Approved	
6.10.18	S2-166107	LS OUT	[DRAFT] LS on migration from Option 3 to NextGen Core	Qualcomm Incorporated	-	-	-	-	-	Rel-14		Revision of S2-165672. This was left for e-mail approval. e-mail revision 3 approved. Revised to S2-166288.	Revised	S2-166288
6.10.4	S2-166108	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-165682, merging S2-165881. Revised to S2-166241.	Revised	S2-166241

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
6.10.4	S2-166109	P-CR	Updated interim agreements on session management	NEC, NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Revision of S2-165718. Revised to S2-166281.	Revised	S2-166281
6.10.4	S2-166110	P-CR	Updates of per node-level tunnel model and interim agreement	Huawei, HiSilicon, China Mobile, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165655, merging S2-165507 and S2-165751. WITHDRAWN	Withdrawn	
6.10.4	S2-166111	P-CR	Interim conclusions on user plane format	Ericsson, Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165560. Revised to S2-166242.	Revised	S2-166242
6.10.4	S2-166112	P-CR	Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165586. Revised to S2-166243.	Revised	S2-166243
6.10.4	S2-166113	P-CR	Way forward on Key Issue 4 on Session Management for WT1 and WT2	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-165766. Revised to S2-166245.	Revised	S2-166245
6.10.4	S2-166114	P-CR	Interim Agreements on Session Management (Key Issue #4)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165585. Revised to S2-166244.	Revised	S2-166244
6.15	S2-166115	LS In	LS from RAN WG1: LS on collisions between SC-PTM and Paging in NB-IoT	RAN WG1	-	-	-	-	-	Rel-14	NB_IOTenh	LATE DOC: Rx 18/10, 20:20. Not Handled. Postponed to meeting #118.	Postponed	
6.10.3	S2-166116	P-CR	Clarifications and proposed way forward on Mobility Management Parameters - Key issue #3	Qualcomm Incorporated, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-165720, merging S2-165622. Revised to S2-166223.	Revised	S2-166223
6.10.3	S2-166117	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165621. Revised to S2-166224.	Revised	S2-166224
6.14	S2-166118	LS OUT	LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Revision of S2-165933.	Approved	

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												e-mail approved and sent to CT WG1		
6.10.3	S2-166119	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	Revision of S2-165825. Revised to S2-166225.	Revised	S2-166225
6.10.3	S2-166120	P-CR	Updated Solution 3.10 for CN Assisted Paging Retry	ETRI	23.799	-	-	-	-		FS_NextGen	Revision of S2-165814. Revised to S2-166226.	Revised	S2-166226
6.10.3	S2-166121	P-CR	UE reachability management in Inactive mode	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165688. Revised to S2-166227.	Revised	S2-166227
6.10.3	S2-166122	P-CR	Solution evaluation 6.3.12 'Solution for UE reachability in power saving state'	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165627. Agreed in parallel session Block approved	Approved	
6.10.3	S2-166123	P-CR	Update of Dynamic Mobility Management	Deutsche Telekom, Telecom Italia, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-165697. WITHDRAWN (not provided)	Withdrawn	
6.10.3	S2-166124	P-CR	Intra-RAT Handover procedure	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165783. Agreed in parallel session Block approved	Approved	
6.10.3	S2-166125	P-CR	Addition of lightweight UE Status Update procedure at NG1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165862. Agreed in parallel session Block approved	Approved	
6.10.8	S2-166126	P-CR	Interim Agreements on common AN-CN interface	Motorola Mobility, Lenovo, Broadcom, Qualcomm Incorporated, Intel, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166099. Revised to S2-166252.	Revised	S2-166252
6.10.8	S2-166127	P-CR	Some Interim Agreements on	CATT,CATR, LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165824.	Approved	

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			KI#8									Agreed in parallel session Block approved		
6.10.8	S2-166128	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165592. Revised to S2-166251.	Revised	S2-166251
6.10.8	S2-166129	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access	Qualcomm Inc., LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165767, merging S2-165562. Revised to S2-166254.	Revised	S2-166254
6.10.8	S2-166130	P-CR	Solution: Standalone non-3GPP access via NG2/NG3	Motorola Mobility, Lenovo, Broadcom, CMCC, Rogers	23.799	-	-	-	-		FS_NextGen	Revision of S2-165650. Approved	Approved	
6.14	S2-166131	LS In	LS from CT WG1: Reply LS on PS Data Off	CT WG1	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Reply from CT WG1 in response to S2-166118. Noted in parallel session	Noted	
6.10.19	S2-166132	P-CR	Key Issue #19: EPC/NGCN updates for 'virtualisation'	Vodafone	23.799	-	-	-	-		FS_NextGen	Revision of S2-165884. Revised to S2-166264.	Revised	S2-166264
6.10.10	S2-166133	P-CR	Interim agreements on the Policy Framework	Ericsson, ZTE, Oracle	23.799	-	-	-	-		FS_NextGen	Revision of S2-165536. This was left for e-mail approval. e-mail approved	Approved	
6.10.10	S2-166134	P-CR	Updates in Policy Reference Architecture to reflect roaming aspects	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165534. WITHDRAWN (not provided)	Withdrawn	
6.10.10	S2-166135	P-CR	On the need on an interface between Policy and SDM	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165537. Postponed	Postponed	
6.10.10	S2-166136	P-CR	solution for enhanced encrypted traffic	China Telecom, Alibaba	23.799	-	-	-	-		FS_NextGen	Revision of S2-165740. Approved	Approved	

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			detection											
6.10.10	S2-166137	P-CR	Policy on RAT/Frequency Selection Priority	Huawei, HiSilicon, NICT, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165878. Revised to S2-166259.	Revised	S2-166259
6.10.10	S2-166138	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165771. Approved	Approved	
6.10.10	S2-166139	P-CR	Discussions and proposals on the considerations of Policy Control Framework for Network Slicing support	ZTE, Oracle, Telecom Italia, ETRI, KDDI, NEC, Sandvine	23.799	-	-	-	-		FS_NextGen	Revision of S2-165569. Approved	Approved	
6.10.7	S2-166140	P-CR	Interim agreements for KI 7	Huawei, HiSilicon, Sprint, CATR, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-165643, merging S2-165810. Revised to S2-166255.	Revised	S2-166255
6.10.7	S2-166141	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165644. Revised to S2-166253.	Revised	S2-166253
6.10.7	S2-166142	P-CR	Updates on solution for Control plane interconnection model with a data layer	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera, T-Mobile US, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165772. Revised to S2-166258.	Revised	S2-166258
6.10.7	S2-166143	P-CR	Interim agreements for control plane interconnection model	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, Deutsche Telekom, AT&T, Verizon, China Mobile, Oracle	23.799	-	-	-	-		FS_NextGen	Revision of S2-165775. WITHDRAWN (not provided)	Withdrawn	
6.10.7	S2-166144	P-CR	Interim agreements for KI 7	Cisco Systems, Inc., Ericsson, NTT DoCoMo, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-165801. Revised to S2-166257.	Revised	S2-166257
6.10	S2-166145	OTHER	NextGen questions for conclusion	Rapporteurs (Nokia)	-	-	-	-	-		FS_NextGen	Revised to S2-166147.	Revised	S2-166147
6.10.1	S2-166146	DISCUSSION	Update to section 8.1.Interim	Editor (Nokia)	-	-	-	-	-		FS_NextGen	Created at the meeting.	Revised	S2-166210

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			Agreements based on drafting at SA WG2#117									Revised to S2-166210.		
6.10	S2-166147	OTHER	NextGen questions for conclusion	Drafting convenor (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166145. Revised to S2-166172.	Revised	S2-166172
6.15	S2-166148	LS In	LS from CT WG1: LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	CT WG1	-	-	-	-	-	Rel-14	CIOT-CT	LATE DOC: Rx 20/10, 11:20. Response drafted in S2-165986. Final response in S2-166286	Replied to	
6.10.22	S2-166149	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell, Verizon, Cisco, Samsung, Intel, LGE, British Telecom.	23.799	-	-	-	-		FS_NextGen	Revision of S2-165770. Approved	Approved	
6.4	S2-166160	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Revision of S2-165946. Revised in parallel session to S2-166231.	Revised	S2-166231
6.14	S2-166161	P-CR	New extendable solutions with no UE modem and no VPLMN impact for early deployment	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165960. Agreed in parallel session Block approved	Approved	
6.14	S2-166162	P-CR	New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165963. Agreed in parallel session Block approved	Approved	
6.21	S2-166163	P-CR	Solution for User Plane QoS differentiation in untrusted WLAN case	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165954. Revised in parallel session to S2-166028.	Revised	S2-166028
6.14	S2-166164	P-CR	Data Off evaluation	Nokia, Alcatel-	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of	Approved	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			and way forward	Lucent Shanghai Bell								S2-165964. Agreed in parallel session Block approved		
6.10.22	S2-166170	P-CR	Solution: Consolidated architecture option X	Huawei, Hisilicon, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165645. Approved	Approved	
6.10.22	S2-166171	P-CR	Agreement on the overall architecture	China Mobile, AT&T, Telecom Italia, Sprint, ZTE, CATR, Broadcom, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166017. Revised, merging part of S2-166018, to S2-166265.	Revised	S2-166265
6.10	S2-166172	OTHER	NextGen questions for conclusion - updated during Thu Q1 session	Rapporteurs (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166147. Endorsed and the agreements were extracted for inclusion in the TR in S2-166173	Endorsed	
6.10	S2-166173	P-CR	Interim agreements Extracted from Show of hands on Thursday, October 20	Nokia	23.799	-	-	-	-		FS_NextGen	Revised to S2-166237.	Revised	S2-166237
6.8	S2-166174	CR	23.214 CR0003R2 (Rel-14, 'F'): Corrections to buffering in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0003	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166062. Agreed in parallel session Block approved	Agreed	
6.8	S2-166175	CR	23.214 CR0010R2 (Rel-14, 'B'): Buffering and F-TEIDu Allocation	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	23.214	0010	2	B	14.0.0	Rel-14	CUPS	Revision of S2-166061. Agreed in parallel session Block approved	Agreed	
6.8	S2-166176	CR	23.214 CR0001R2 (Rel-14, 'F'): Controlling the UP	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0001	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166060. Noted in	Noted	

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			to buffer, drop or duplicate data packets									parallel session		
6.8	S2-166177	CR	23.214 CR0004R2 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	2	B	14.0.0	Rel-14	CUPS	Revision of S2-166059. Revised in parallel session to S2-166179.	Revised	S2-166179
6.8	S2-166178	CR	23.214 CR0006R2 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166066. Revised in parallel session to S2-166214.	Revised	S2-166214
6.8	S2-166179	CR	23.214 CR0004R3 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	3	B	14.0.0	Rel-14	CUPS	Revision of S2-166177. Revised to S2-166273.	Revised	S2-166273
6.15	S2-166180	P-CR	Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	Qualcomm Incorporated, Intel	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165984. Revised in parallel session, merging S2-165567, to S2-166201.	Revised	S2-166201
6.15	S2-166181	P-CR	CIoT_Correction to KI7 solution 9	NEC	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166012. Agreed in parallel session Block approved	Approved	
6.16	S2-166182	CR	23.682 CR0239R2 (Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs	ZTE	23.682	0239	2	C	14.1.0	Rel-14	GENCEF	Revision of S2-165980. Revised in parallel session to S2-166192.	Revised	S2-166192
6.16	S2-166183	CR	23.682 CR0227R5 (Rel-14, 'C'): Group based MONTE Event Configuration via HSS	Samsung	23.682	0227	5	C	14.1.0	Rel-14	GENCEF	Revision of S2-165979. Revised in parallel session to S2-166193.	Revised	S2-166193
6.10	S2-166184	P-CR	Update to interim	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of	Revised	S2-166271

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.2			agreements for QoS framework									S2-166000. Revised to S2-166271.		
6.10.2	S2-166185	P-CR	Interim agreements for QoS framework	Nokia, Alcatel-Lucent Shanghai Bell, AT&T	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165968. Approved	Approved	
6.10.2	S2-166186	P-CR	Interim Agreement on Reflective QoS	Ericsson	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165969. Approved	Approved	
6.10.2	S2-166187	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165970. Revised to S2-166272.	Revised	S2-166272
6.10.2	S2-166188	P-CR	Additional interim agreements for QoS establishment	Qualcomm Inc.	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165997. Agreed in parallel session Block approved	Approved	
6.10.2	S2-166189	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165998. Revised to S2-166269.	Revised	S2-166269
6.10.2	S2-166190	LS OUT	[DRAFT] LS on NextGen QoS interim agreements	Intel	-	-	-	-	-	-	-	Revision of S2-165999. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166289.	Revised	S2-166289
6.15	S2-166191	Other	FS_CIoT_Ext: Indicative show of hands	Rapporteur (Intel)	-	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166002. Noted in parallel session	Noted	
6.16	S2-166192	CR	23.682 CR0239R3 (Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs	ZTE	23.682	0239	3	C	14.1.0	Rel-14	GENCEF	Revision of S2-166182. Agreed in parallel session Block approved	Agreed	
6.16	S2-166193	CR	23.682 CR0227R6 (Rel-14, 'C'): Group	Samsung	23.682	0227	6	C	14.1.0	Rel-14	GENCEF	Revision of S2-166183.	Agreed	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			based MONTE Event Configuration via HSS									Agreed in parallel session Block approved		
5.1.1	S2-166194	CR	23.401 CR3140R2 (Rel-13, 'F'): APN Rate Control and emergency bearer service	HTC	23.401	3140	2	F	13.8.0	Rel-13	CIoT	Revision of S2-166004. Agreed in parallel session Block approved	Agreed	
5.1.1	S2-166195	CR	23.682 CR0241R2 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	2	F	13.7.0	Rel-13	CIoT	Revision of S2-166008. Revised to S2-166267.	Revised	S2-166267
5.1.1	S2-166196	CR	23.682 CR0242R2 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	2	A	14.1.0	Rel-14	CIoT	Revision of S2-166009. Revised to S2-166268.	Revised	S2-166268
5.1.1	S2-166197	CR	23.401 CR3144R2 (Rel-14, 'F'): Missing indirect forwarding tunnel deletion in TAU with SGW change	Nokia, Alcatel-Lucent Shanghai Bell, Ericsson	23.401	3144	2	F	14.1.0	Rel-14	HLcom	Revision of S2-166006. Agreed in parallel session Block approved	Agreed	
6.15	S2-166198	CR	23.401 CR3143R2 (Rel-14, 'B'): Control Plane data back-off timer introduction	Qualcomm Incorporated, NEC, Intel, Samsung	23.401	3143	2	B	14.1.0	Rel-14	CIoT	Revision of S2-165990. Agreed in parallel session Block approved	Agreed	
6.15	S2-166199	P-CR	Conclusion solution 9 - Overload Start	Ericsson	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165985. Agreed in parallel session Block approved	Approved	
6.15	S2-166200	P-CR	Addition of Impacts and Evaluations for Location Services Solutions	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166013. Agreed in parallel	Approved	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
												session Block approved		
6.15	S2-166201	P-CR	Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	Qualcomm Incorporated, Intel	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166180, merging S2-165567. Agreed in parallel session Block approved	Approved	
6.10.1	S2-166210	DISCUSSION	Update to section 8.1.Interim Agreements based on drafting at SA WG2#117	Editor (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166146. Agreed in parallel session Block approved	Approved	
7.1	S2-166211	SID NEW	Study on Unlicensed spectrum offloading system enhancements	Qualcomm Incorporated, Intel, KDDI, NEC, Convida Wireless, ATT, Nokia	-	-	-	-	-	Rel-15		Revision of S2-165913. Approved	Approved	
7.1	S2-166212	SID NEW	New SID on architecture enhancements to ProSe UE-to-Network Relay	Huawei, HiSilicon, Qualcomm Incorporated, LG Electronics, Nokia, Convida Wireless, KPN, Sony, Intel, China Mobile, AT&T, ITRI, Samsung, InterDigital, China Unicom, Vodafone	-	-	-	-	-			Revision of S2-165914. Approved	Approved	
6.8	S2-166213	CR	23.214 CR0012R3 (Rel-14, 'F'): Support of PGW Pause of Charging	Huawei, HiSilicon	23.214	0012	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166075. Agreed in parallel session Block approved	Agreed	
6.8	S2-166214	CR	23.214 CR0006R3 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166178. This CR was agreed	Agreed	
6.8	S2-166215	CR	23.214 CR0014R3 (Rel-14, 'F'):	Huawei, HiSilicon	23.214	0014	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166076.	Agreed	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			Solution of TDF-U Selection in case of Unsolicited Reporting									Agreed in parallel session Block approved		
6.10.3	S2-166220	P-CR	Interim agreements on Reachability	Ericsson, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166082. Approved	Approved	
6.10.3	S2-166221	P-CR	Update of solution 6.3.6 and interim agreements for power saving	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revision of S2-166081. WITHDRAWN (not provided)	Withdrawn	
6.10.3	S2-166222	P-CR	Clarification of Interim Agreements on Mobility on Demand	Ericsson, MediaTek Inc., Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166083. Approved	Approved	
6.10.3	S2-166223	P-CR	Clarifications and proposed way forward on Mobility Management Parameters - Key issue #3	Qualcomm Incorporated, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-166116. Approved	Approved	
6.10.3	S2-166224	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166117. Revised to S2-166276.	Revised	S2-166276
6.10.3	S2-166225	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166119. Revised to S2-166277.	Revised	S2-166277
6.10.3	S2-166226	P-CR	Updated Solution 3.10 for CN Assisted Paging Retry	ETRI	23.799	-	-	-	-		FS_NextGen	Revision of S2-166120. Approved	Approved	
6.10.3	S2-166227	P-CR	UE reachability management in Inactive mode	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166121. Approved	Approved	
6.10.3	S2-166228	P-CR	Multiple level Tracking area management and update the interim agreement on mobility management	Huawei, HiSilicon, China Mobile, China Unicom, China Telecom, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165839. Revised to S2-166278.	Revised	S2-166278
5.3	S2-166229	CR	23.161 CR0024R2 (Rel-13, 'F'): NBIFOM with RAN Controlled WLAN	Ericsson, Intel, Broadcom	23.161	0024	2	F	13.4.0	Rel-13	NBIFOM	Revision of S2-165934. Agreed in parallel	Agreed	

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			Interworking									session Block approved		
5.3	S2-166230	CR	23.402 CR2967R2 (Rel-14, 'F'): Correction of emergency services continuity between WLAN and 3GPP access	Nokia, Alcatel-Lucent Shanghai Bell	23.402	2967	2	F	14.1.0	Rel-14	SEW2	Revision of S2-165936. Revised to S2-166266.	Revised	S2-166266
6.4	S2-166231	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Revision of S2-166160. Agreed in parallel session Block approved	Approved	
6.10.6	S2-166235	P-CR	Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths	InterDigital	23.799	-	-	-	-		FS_NextGen	Revision of S2-166095. Revised to S2-166249.	Revised	S2-166249
6.10.3	S2-166236	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	Editors	23.799	-	-	-	-		FS_NextGen	Revision of S2-166085. Revised to S2-166275.	Revised	S2-166275
6.10	S2-166237	P-CR	Interim agreements Extracted from Show of hands on Thursday, October 20	Rapporteurs (Nokia)	23.799	-	-	-	-		FS_NextGen	Revision of S2-166173. Agreed in parallel session Block approved	Approved	
6.10	S2-166238	LS OUT	LS reply on 5G work alignment	SA WG2	-	-	-	-	-		FS_NextGen, SMARTER	Revision of S2-165915. Agreed in parallel session Block approved	Approved	
6.10	S2-166239	LS OUT	[DRAFT] LS to GSMA on Next Generation Roaming	SA WG2	-	-	-	-	-	Rel-14		Revision of S2-165916. This was left for e-mail approval. e-mail revision 2 approved. Revised to	Revised	S2-166290

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												S2-166290.		
6.10.4	S2-166240	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166049. Revised to S2-166279.	Revised	S2-166279
6.10.4	S2-166241	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166108. Revised off-line in S2-166260.	Revised	S2-166260
6.10.4	S2-166242	P-CR	Interim conclusions on user plane format	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166111. Agreed in parallel session Block approved	Approved	
6.10.4	S2-166243	P-CR	Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166112. Approved	Approved	
6.10.4	S2-166244	P-CR	Interim Agreements on Session Management (Key Issue #4)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166114. Agreed in parallel session Block approved	Approved	
6.10.4	S2-166245	P-CR	Way forward on Key Issue 4 on Session Management for WT1 and WT2	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-166113. Agreed in parallel session Block approved	Approved	
6.10.6	S2-166246	P-CR	Interim Agreements on Session Management (Key Issue 5 and 6)	Nokia, Alcatel-Lucent Shanghai Bell, LGE, Intel	23.799	-	-	-	-		FS_NextGen	Revision of S2-166086. Approved	Approved	
6.10.6	S2-166247	P-CR	Interim agreement on how the UE determines the SSC mode	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revision of S2-166093. Agreed in parallel session Block approved	Approved	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
6.10.6	S2-166248	P-CR	Interim Agreements for KI 6	Huawei, HiSilicon, KDDI, Sprint	23.799	-	-	-	-		FS_NextGen	Revision of S2-166094. Agreed in parallel session Block approved	Approved	
6.10.6	S2-166249	P-CR	Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths	InterDigital	23.799	-	-	-	-		FS_NextGen	Revision of S2-166235. Approved	Approved	
6.10.6	S2-166250	P-CR	Updates to solution 6.6.1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166096. Agreed in parallel session Block approved	Approved	
6.10.8	S2-166251	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166128. Revised to S2-166282.	Revised	S2-166282
6.10.8	S2-166252	P-CR	Interim Agreements on common AN-CN interface	Motorola Mobility, Lenovo, Broadcom, Qualcomm Incorporated, Intel, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166126. Approved	Approved	
6.10.7	S2-166253	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166141. Revised to S2-166256.	Revised	S2-166256
6.10.8	S2-166254	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access	Qualcomm Inc., LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166129. Revised to S2-166283.	Revised	S2-166283
6.10.7	S2-166255	P-CR	Interim agreements for KI 7	Huawei, HiSilicon, Sprint, CATR, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-166140. Approved	Approved	
6.10.7	S2-166256	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom, AT&T	23.799	-	-	-	-		FS_NextGen	Revision of S2-166253. Approved	Approved	

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6.10.7	S2-166257	P-CR	Interim agreements for KI 7	Cisco Systems, Inc., Ericsson, NTT DoCoMo, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-166144. Merged with S2-166258 into S2-166284	Merged	
6.10.7	S2-166258	P-CR	Updates on solution for Control plane interconnection model with a data layer	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera, T-Mobile US, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166142. Revised, merging parts of S2-166257 to S2-166284.	Revised	S2-166284
6.10.10	S2-166259	P-CR	Policy on RAT/Frequency Selection Priority	Huawei, HiSilicon, NICT, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166137. This was left for e-mail approval. e-mail approved	Approved	
6.10.4	S2-166260	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166241. This was left for e-mail approval. e-mail revision 5 approved. Revised to S2-166291.	Revised	S2-166291
6.10.18	S2-166261	P-CR	Update to Solution 18.4	Intel, Samsung	23.799	-	-	-	-		FS_NextGen	Revision of S2-166103. This was left for e-mail approval. e-mail revision 2 approved. Revised to S2-166292.	Revised	S2-166292
6.10.18	S2-166262	P-CR	Migration solution with Evolved E-UTRAN to operate EPC and NextGen Core simultaneously	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166105. Approved	Approved	
6.10.18	S2-166263	P-CR	Way forward on EPC-NG Core Interworking	Qualcomm Incorporated, Huawei, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166104. This was left for e-mail	Approved	

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												approval. e-mail approved		
6.10.19	S2-166264	P-CR	Key Issue #19: EPC/NGCN updates for 'virtualisation'	Vodafone, Deutsche Telekom AG	23.799	-	-	-	-		FS_NextGen	Revision of S2-166132. This was left for e-mail approval. e-mail approved	Approved	
6.10.22	S2-166265	P-CR	Agreement on the overall architecture	China Mobile, AT&T, Telecom Italia, Sprint, ZTE, CATR, Broadcom, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166171, merging part of S2-166018. Approved	Approved	
5.3	S2-166266	CR	23.402 CR2967R3 (Rel-14, 'F'): Correction of emergency services continuity between WLAN and 3GPP access	Nokia, Alcatel-Lucent Shanghai Bell	23.402	2967	3	F	14.1.0	Rel-14	SEW2	Revision of S2-166230. This CR was agreed	Agreed	
5.1.1	S2-166267	CR	23.682 CR0241R3 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	3	F	13.7.0	Rel-13	CIoT	Revision of S2-166195. This CR was agreed	Agreed	
5.1.1	S2-166268	CR	23.682 CR0242R3 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	3	A	14.1.0	Rel-14	CIoT	Revision of S2-166196. This CR was agreed	Agreed	
6.10.2	S2-166269	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-166189. This was left for e-mail approval. e-mail approved	Approved	
6.15	S2-166270	P-CR	Evaluation & Conclusion Key issue #2	Ericsson	23.730	-	-	-	-		FS_CIoT_Ext	Revision of S2-165521. This was left for e-mail approval. Noted	Noted	
6.10	S2-166271	P-CR	Update to interim	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of	Revised	S2-166293

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.2			agreements for QoS framework									S2-166184. This was left for e-mail approval. e-mail revision 4 approved. Revised to S2-166293.		
6.10.2	S2-166272	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-166187. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166294.	Revised	S2-166294
6.8	S2-166273	CR	23.214 CR0004R4 (Rel-14, 'F'): Sx parameter corrections	Ericsson	23.214	0004	4	F	14.0.0	Rel-14	CUPS	Revision of S2-166179. This CR was agreed	Agreed	
6.8	S2-166274	CR	23.214 CR0013R3 (Rel-14, 'F'): Sx Session Level Reporting Procedure Update	Huawei, HiSilicon	23.214	0013	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166072. This was left for e-mail approval. e-mail approved. This CR was agreed	Agreed	
6.10.3	S2-166275	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	CATT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166236. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166295.	Revised	S2-166295
6.10.3	S2-166276	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166224. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166296.	Revised	S2-166296
6.10	S2-166277	P-CR	Way Forward on	CATT	23.799	-	-	-	-		FS_NextGen	Revision of	Revised	S2-166297

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.3			UE reachability management									S2-166225. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166297.		
6.10.3	S2-166278	P-CR	Multiple level Tracking area management and update the interim agreement on mobility management	Huawei, HiSilicon, China Mobile, China Unicom, China Telecom, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-166228. Approved	Approved	
6.10.4	S2-166279	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166240. Approved	Approved	
6.10.4	S2-166280	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166052. This was left for e-mail approval. e-mail revision 5 approved. Revised to S2-166298.	Revised	S2-166298
6.10.4	S2-166281	P-CR	Updated interim agreements on session management	NEC, NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Revision of S2-166109. Approved	Approved	
6.10.8	S2-166282	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166251. Approved	Approved	
6.10.8	S2-166283	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access	Qualcomm Inc., LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166254. Approved	Approved	
6.10.7	S2-166284	P-CR	Updates on solution for Control plane interconnection model with a data layer	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera, T-Mobile US,	23.799	-	-	-	-		FS_NextGen	Revision of S2-166258, merging parts of S2-166257. Not Handled. It was decided	Not Handled	

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				Deutsche Telekom								that this should be done by the Rapporteur when implementing the TR.		
6.15	S2-166285	LS OUT	LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT	SA WG2	-	-	-	-	-	-	-	e-mail revision of S2-166011. Approved	Approved	
6.15	S2-166286	LS OUT	Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	SA WG2	-	-	-	-	-	-	-	Response to S2-165907 and S2-166148. e-mail revision 8 of S2-165986. Approved	Approved	
6.2	S2-166287	LS OUT	Reply LS on QCI for CLUE Messages	SA WG2	-	-	-	-	-	-	-	Response to S2-165479. e-mail revision 1 of S2-166090. Approved	Approved	
6.10.18	S2-166288	LS OUT	LS on migration from Option 3 to NextGen Core	SA WG2	-	-	-	-	-	Rel-14		e-mail revision 3 of S2-166107. Approved	Approved	
6.10.2	S2-166289	LS OUT	LS on NextGen QoS interim agreements	SA WG2	-	-	-	-	-	-	-	e-mail revision 1 of S2-166190. Approved	Approved	
6.10	S2-166290	LS OUT	LS to GSMA on Next Generation Roaming	SA WG2	-	-	-	-	-	Rel-14		e-mail revision 2 of S2-166239. Approved	Approved	
6.10.4	S2-166291	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	e-mail revision 5 of S2-166260. Approved	Approved	
6.10.18	S2-166292	P-CR	Update to Solution 18.4	Intel, Samsung	23.799	-	-	-	-		FS_NextGen	e-mail revision 2 of S2-166261. Approved	Approved	
6.10	S2-166293	P-CR	Update to interim	Intel	23.799	-	-	-	-	-	FS_NextGen	e-mail	Approved	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.2			agreements for QoS framework									revision 4 of S2-166271. Approved		
6.10.2	S2-166294	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	e-mail revision 1 of S2-166272. Approved	Approved	
6.10.3	S2-166295	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	CATT	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166275. Approved	Approved	
6.10.3	S2-166296	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166276. Approved	Approved	
6.10.3	S2-166297	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166277. Approved	Approved	
6.10.4	S2-166298	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	e-mail revision 5 of S2-166280. Approved	Approved	

777 Entries.

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A.2 List of meeting documents ordered by Agenda Item

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
1	S2-165883	OTHER	Welcome to Kaohsiung	TAICS, Mediatek, Chunghwa Telecom, ITRI	-	-	-	-	-			Noted	Noted	
2	S2-165473	Agenda	Draft Agenda for SA WG2#117	SA WG2 Chairman	-	-	-	-	-			Approved. The schedule will be updated on the local 'drafts' folder throughout the meeting.	Approved	
3	S2-165474	REPORT	Draft Report of SA WG2 meeting #116BIS	SA WG2 Secretary	-	-	-	-	-			Approved	Approved	
4.1	S2-165484	LS In	LS from TSG SA: Completion of SA WG3-LI Study TR 33.827 on S8HR	TSG SA	-	-	-	-	-	Rel-14	FS_LIV8	Responses drafted in S2-165850 on IMS aspect under AI 6.4 and S2-165882 on SGW aspect under AI 6.1. Final response in S2-166231	Replied to	
4.1	S2-166058	LS In	LS from RAN WG3: LS on Flexible eNB-ID and Cell-ID in E-UTRAN	RAN WG3	-	-	-	-	-	Rel-14	LTE_FNBID-Core	Not Handled. Postponed to meeting #118.	Postponed	
5.1.1	S2-165478	LS In	LS from ETSI TC LI: LI in the CIoT	ETSI TC LI	-	-	-	-	-		CIoT	Noted in parallel session	Noted	
5.1.1	S2-165481	LS In	LS from SA WG5: Reply LS to SA WG2, CT WG4 Response LSs on Control Plane CIoT Optimisation Indicator propagated to PGW for charging purpose	SA WG5	-	-	-	-	-	Rel-13	CIoT	Noted in parallel session	Noted	
5.1.1	S2-165482	LS In	LS from ITU-T JCA-IoT SC&C:	ITU-T JCA-IoT SC&C	-	-	-	-	-			Noted in parallel	Noted	

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			LS on recent work by JCA-IoT and SC&C									session		
5.1.1	S2-165670	CR	23.401 CR3136 (Rel-13, 'F'): Clarifying the UE behaviour for switch to UP	Qualcomm Incorporated	23.401	3136	-	F	13.8.0	Rel-13	CIoT	Noted in parallel session	Noted	
5.1.1	S2-165671	CR	23.401 CR3137 (Rel-14, 'A'): Clarifying the UE behaviour for switch to UP	Qualcomm Incorporated	23.401	3137	-	A	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166003.	Revised	S2-166003
5.1.1	S2-166003	CR	23.401 CR3137R1 (Rel-14, 'F'): Clarifying the UE behaviour for switch to UP	Qualcomm Incorporated	23.401	3137	1	F	14.1.0	Rel-14	CIoT	Revision of S2-165671. Agreed in parallel session Block approved	Agreed	
5.1.1	S2-165674	CR	23.401 CR3138 (Rel-13, 'F'): Correction of handling of resume cause	Intel	23.401	3138	-	F	13.8.0	Rel-13	CIoT	Agreed in parallel session Block approved	Agreed	
5.1.1	S2-165675	CR	23.401 CR3139 (Rel-14, 'A'): Correction of handling of resume cause	Intel	23.401	3139	-	A	14.1.0	Rel-14	CIoT	Agreed in parallel session Block approved	Agreed	
5.1.1	S2-165736	CR	23.401 CR3140 (Rel-13, 'F'): APN Rate Control and emergency bearer service	HTC	23.401	3140	-	F	13.8.0	Rel-13	CIoT	Revised in parallel session to S2-166004.	Revised	S2-166004
5.1.1	S2-166004	CR	23.401 CR3140R1 (Rel-13, 'F'): APN Rate Control and emergency bearer service	HTC	23.401	3140	1	F	13.8.0	Rel-13	CIoT	Revision of S2-165736. Revised in parallel session to S2-166194.	Revised	S2-166194
5.1.1	S2-166194	CR	23.401 CR3140R2 (Rel-13, 'F'): APN Rate Control and emergency bearer service	HTC	23.401	3140	2	F	13.8.0	Rel-13	CIoT	Revision of S2-166004. Agreed in parallel session Block approved	Agreed	
5.1.	S2-165737	CR	23.401 CR3141	HTC	23.401	3141	-	A	14.1.0	Rel-	CIoT	Revised in	Revised	S2-166005

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1			(Rel-14, 'A'): APN rate control and emergency bearer service							14		parallel session, merging S2-165738, to S2-166005.		
5.1.1	S2-166005	CR	23.401 CR3141R1 (Rel-14, 'A'): APN rate control and emergency bearer service	HTC	23.401	3141	1	A	14.1.0	Rel-14	CIoT	Revision of S2-165737, merging S2-165738. Agreed in parallel session Block approved	Agreed	
5.1.1	S2-165738	CR	23.401 CR3142 (Rel-14, 'F'): Clarification to the APN rate control procedure	HTC	23.401	3142	-	F	14.1.0	Rel-14	CIoT	Merged with S2-165737 into S2-166005	Merged	
5.1.1	S2-165857	CR	23.401 CR3144 (Rel-14, 'F'): Missing indirect forwarding tunnel deletion in TAU with SGW change	Nokia, Alcatel-Lucent Shanghai Bell	23.401	3144	-	F	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166006.	Revised	S2-166006
5.1.1	S2-166006	CR	23.401 CR3144R1 (Rel-14, 'F'): Missing indirect forwarding tunnel deletion in TAU with SGW change	Nokia, Alcatel-Lucent Shanghai Bell, Ericsson	23.401	3144	1	F	14.1.0	Rel-14	CIoT	Revision of S2-165857. Revised in parallel session to S2-166197.	Revised	S2-166197
5.1.1	S2-166197	CR	23.401 CR3144R2 (Rel-14, 'F'): Missing indirect forwarding tunnel deletion in TAU with SGW change	Nokia, Alcatel-Lucent Shanghai Bell, Ericsson	23.401	3144	2	F	14.1.0	Rel-14	HLcom	Revision of S2-166006. Agreed in parallel session Block approved	Agreed	
5.1.1	S2-165707	CR	23.682 CR0237 (Rel-14, 'F'): SCEF Behavior when MT NIDD Causes a Trigger	Convida Wireless, Oracle	23.682	0237	-	F	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166007.	Revised	S2-166007
5.1.1	S2-166007	CR	23.682 CR0237R1 (Rel-14, 'F'): SCEF Behavior when MT NIDD Causes a Trigger	Convida Wireless, Oracle	23.682	0237	1	F	14.1.0	Rel-14	CIoT	Revision of S2-165707. Agreed in parallel session Block	Agreed	

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												approved		
5.1.1	S2-165759	CR	23.682 CR0241 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	-	F	13.7.0	Rel-13	CIoT	Revised in parallel session to S2-166008.	Revised	S2-166008
5.1.1	S2-166008	CR	23.682 CR0241R1 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	1	F	13.7.0	Rel-13	CIoT	Revision of S2-165759. Revised in parallel session to S2-166195.	Revised	S2-166195
5.1.1	S2-166195	CR	23.682 CR0241R2 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	2	F	13.7.0	Rel-13	CIoT	Revision of S2-166008. Revised to S2-166267.	Revised	S2-166267
5.1.1	S2-166267	CR	23.682 CR0241R3 (Rel-13, 'F'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0241	3	F	13.7.0	Rel-13	CIoT	Revision of S2-166195. This CR was agreed	Agreed	
5.1.1	S2-165760	CR	23.682 CR0242 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	-	A	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-166009.	Revised	S2-166009
5.1.1	S2-166009	CR	23.682 CR0242R1 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	1	A	14.1.0	Rel-14	CIoT	Revision of S2-165760. Revised in parallel session to S2-166196.	Revised	S2-166196
5.1.1	S2-166196	CR	23.682 CR0242R2 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	2	A	14.1.0	Rel-14	CIoT	Revision of S2-166009. Revised to S2-166268.	Revised	S2-166268
5.1.1	S2-166268	CR	23.682 CR0242R3 (Rel-14, 'A'): Corrections for MT NIDD procedure to handle multiple non-IP data	NEC	23.682	0242	3	A	14.1.0	Rel-14	CIoT	Revision of S2-166196. This CR was agreed	Agreed	

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5.1.1	S2-165852	CR	23.682 CR0243 (Rel-13, 'F'): Correction of T6a connection establishment parameters	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0243	-	F	13.7.0	Rel-13	CIoT	Left open in parallel session. Noted in parallel session	Noted	
5.1.1	S2-165855	CR	23.682 CR0244 (Rel-14, 'A'): Correction of T6a Connection Establishment parameters	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0244	-	A	14.1.0	Rel-14	CIoT	Left open in parallel session. Noted in parallel session	Noted	
5.2	S2-165726	CR	23.203 CR1069 (Rel-13, 'F'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1069	-	F	13.9.0	Rel-13	TEI13, MCPTT	No need for TEI13 WI Code. Revised in parallel session to S2-166088.	Revised	S2-166088
5.2	S2-166088	CR	23.203 CR1069R1 (Rel-13, 'F'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1069	1	F	13.9.0	Rel-13	MCPTT	Revision of S2-165726. Agreed in parallel session Block approved	Agreed	
5.2	S2-165727	CR	23.203 CR1070 (Rel-14, 'A'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1070	-	A	14.1.0	Rel-14	MCPTT	Revised in parallel session to S2-166089.	Revised	S2-166089
5.2	S2-166089	CR	23.203 CR1070R1 (Rel-14, 'A'): Remove 'same media type' requirement for Priority Sharing	Motorola Solutions, Airwave	23.203	1070	1	A	14.1.0	Rel-14	MCPTT	Revision of S2-165727. Agreed in parallel session Block approved	Agreed	
5.3	S2-165476	LS In	LS from RAN WG2: LS on NBIFOM and steering command	RAN WG2	-	-	-	-	-	Rel-13	LTE_WLAN_radio-Core	Revision of S2-164931. Not Handled. Postponed to meeting #118	Postponed	
5.3	S2-165553	CR	23.161 CR0024 (Rel-13, 'F'): NBIFOM with RAN	Ericsson	23.161	0024	-	F	13.4.0	Rel-13	NBIFOM	Revised in parallel session to	Revised	S2-165934

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			Controlled WLAN Interworking									S2-165934.		
5.3	S2-165934	CR	23.161 CR0024R1 (Rel-13, 'F'): NBIFOM with RAN Controlled WLAN Interworking	Ericsson, Intel	23.161	0024	1	F	13.4.0	Rel-13	NBIFOM	Revision of S2-165553. Revised in parallel session to S2-166229.	Revised	S2-166229
5.3	S2-166229	CR	23.161 CR0024R2 (Rel-13, 'F'): NBIFOM with RAN Controlled WLAN Interworking	Ericsson, Intel, Broadcom	23.161	0024	2	F	13.4.0	Rel-13	NBIFOM	Revision of S2-165934. Agreed in parallel session Block approved	Agreed	
5.3	S2-165841	CR	23.161 CR0025 (Rel-13, 'F'): Correction related to RAN rules	Intel	23.161	0025	-	F	13.4.0	Rel-13	NBIFOM	Noted in parallel session	Noted	
5.3	S2-165493	CR	23.401 CR3130 (Rel-14, 'F'): Corrections for allowing seamless handovers of emergency sessions to WLAN	Nokia, Alcatel-Lucent Shanghai Bell	23.401	3130	-	F	14.1.0	Rel-14	SEW2	Revised in parallel session to S2-165935.	Revised	S2-165935
5.3	S2-165935	CR	23.401 CR3130R1 (Rel-14, 'F'): Corrections for allowing seamless handovers of emergency sessions to WLAN	Nokia, Alcatel-Lucent Shanghai Bell	23.401	3130	1	F	14.1.0	Rel-14	SEW2	Revision of S2-165493. Agreed in parallel session Block approved	Agreed	
5.3	S2-165494	CR	23.402 CR2967 (Rel-14, 'F'): Correction of emergency services continuity between WLAN and 3GPP access	Nokia, Alcatel-Lucent Shanghai Bell	23.402	2967	-	F	14.1.0	Rel-14	SEW2	Revised in parallel session to S2-165936.	Revised	S2-165936
5.3	S2-165936	CR	23.402 CR2967R1 (Rel-14, 'F'): Correction of emergency services continuity between WLAN and 3GPP access	Nokia, Alcatel-Lucent Shanghai Bell	23.402	2967	1	F	14.1.0	Rel-14	SEW2	Revision of S2-165494. Revised in parallel session to S2-166230.	Revised	S2-166230
5.3	S2-166230	CR	23.402 CR2967R2 (Rel-14, 'F'):	Nokia, Alcatel-Lucent Shanghai	23.402	2967	2	F	14.1.0	Rel-14	SEW2	Revision of S2-165936.	Revised	S2-166266

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			Correction of emergency services continuity between WLAN and 3GPP access	Bell								Revised to S2-166266.		
5.3	S2-166266	CR	23.402 CR2967R3 (Rel-14, 'F'): Correction of emergency services continuity between WLAN and 3GPP access	Nokia, Alcatel-Lucent Shanghai Bell	23.402	2967	3	F	14.1.0	Rel-14	SEW2	Revision of S2-166230. This CR was agreed	Agreed	
5.4	S2-165510	CR	23.228 CR1161 (Rel-13, 'F'): Editorial change reflecting IMS being access agnostic	Ericsson	23.228	1161	-	F	13.7.0	Rel-13	TEI13	Revised in parallel session to S2-165937.	Revised	S2-165937
5.4	S2-165937	CR	23.228 CR1161R1 (Rel-13, 'F'): Editorial change reflecting IMS being access agnostic	Ericsson	23.228	1161	1	F	13.7.0	Rel-13	TEI13	Revision of S2-165510. Agreed in parallel session Block approved	Agreed	
5.4	S2-165511	CR	23.228 CR1162 (Rel-13, 'F'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1162	-	F	13.7.0	Rel-13	TEI13	Revised in parallel session to S2-165939.	Revised	S2-165939
5.4	S2-165939	CR	23.228 CR1162R1 (Rel-13, 'F'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1162	1	F	13.7.0	Rel-13	TEI13	Revision of S2-165511. Agreed in parallel session Block approved	Agreed	
5.4	S2-165512	CR	23.228 CR1163 (Rel-14, 'A'): Editorial change reflecting IMS being access agnostic	Ericsson	23.228	1163	-	A	14.1.0	Rel-14	TEI14	CR WI Code should be TEI13. Revised in parallel session to S2-165938.	Revised	S2-165938
5.4	S2-165938	CR	23.228 CR1163R1	Ericsson	23.228	1163	1	A	14.1.0	Rel-	TEI13	Revision of	Agreed	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			(Rel-14, 'A'): Editorial change reflecting IMS being access agnostic							14		S2-165512. Agreed in parallel session Block approved		
5.4	S2-165513	CR	23.228 CR1164 (Rel-14, 'A'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1164	-	A	14.1.0	Rel-14	TEI14	CR WI Code should be TEI13. Revised in parallel session to S2-165940.	Revised	S2-165940
5.4	S2-165940	CR	23.228 CR1164R1 (Rel-14, 'A'): Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	Ericsson	23.228	1164	1	A	14.1.0	Rel-14	TEI13	Revision of S2-165513. Agreed in parallel session Block approved	Agreed	
5.4	S2-165792	CR	23.292 CR0234R1 (Rel-13, 'F'): ICS MSC with I2 and T-ADS handling interaction	Nokia	23.292	0234	1	F	13.3.0	Rel-13	TEI13, SAES-CSFB	Merged in parallel session with S2-165818 into S2-165941	Merged	
5.4	S2-165794	CR	23.292 CR0240 (Rel-14, 'A'): ICS MSC with I2 and T-ADS handling interaction	Nokia	23.292	0240	-	A	14.0.0	Rel-14	TEI13, SAES-CSFB	Merged in parallel session with S2-165819 into S2-165942	Merged	
5.4	S2-165817	DISCUSSION	Discussion on the MT via I2	ZTE	-	-	-	-	-		ICSRA	Noted in parallel session	Noted	
5.4	S2-165818	CR	23.292 CR0241 (Rel-13, 'F'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE	23.292	0241	-	F	13.3.0	Rel-13	TEI13, ICSRA	Revised in parallel session, merging S2-165792, to S2-165941.	Revised	S2-165941
5.4	S2-165941	CR	23.292 CR0241R1 (Rel-13, 'F'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE, Nokia	23.292	0241	1	F	13.3.0	Rel-13	TEI13, ICSRA	Revision of S2-165818, merging S2-165792. Postponed in parallel	Postponed	

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												session		
5.4	S2-165819	CR	23.292 CR0242 (Rel-14, 'A'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE	23.292	0242	-	A	14.0.0	Rel-14	TEI13, ICSRA	Revised in parallel session, merging S2-165794, to S2-165942.	Revised	S2-165942
5.4	S2-165942	CR	23.292 CR0242R1 (Rel-14, 'A'): Mobile terminating via I2 while the UE moves the a new MSC.	ZTE, Nokia	23.292	0242	1	A	14.0.0	Rel-14	TEI13, ICSRA	Revision of S2-165819, merging S2-165794. Postponed in parallel session	Postponed	
6.1	S2-165908	LS In	LS from RAN WG2: LS on The progress and questions for the light connection	RAN WG2	-	-	-	-	-	Rel-14	LTE_LIGHT_CON-Core	LATE DOC: Rx 16/10, 11:30. Not Handled. Postponed to meeting #118	Postponed	
6.1	S2-165882	LS OUT	Draft Response LS to 'Completion of SA WG3-LI Study TR 33.827 on S8HR'	Vodafone	-	-	-	-	-	Rel-14		Response to S2-165484. Merged with S2-165850	Merged	
6.1	S2-165480	LS In	LS from SA WG4: Reply LS on external interface for TV services	SA WG4	-	-	-	-	-	Rel-14	FS_AE_enTV	Noted in parallel session	Noted	
6.1	S2-165475	LS In	LS from RAN WG2: Reply LS on Multiple RoHC Contexts for MMCMH	RAN WG2	-	-	-	-	-	Rel-14	MMCMH_Enh	Revision of S2-164930. Noted in parallel session	Noted	
6.1	S2-165540	DISCUSSION	EPS bearer release for ProSe UE-to-Network Relay	ASUSTeK	-	-	-	-	-	Rel-14	eProSe-Ext-SA2	Moved from 6.28 (not on agenda). Noted in parallel session	Noted	
6.1	S2-165541	CR	23.303 CR0321 (Rel-14, 'C'): EPS bearer release for ProSe UE-to-Network Relay	ASUSTeK	23.303	0321	-	C	14.0.0	Rel-14	eProSe-Ext-SA2	Moved from 6.28 (not on agenda). Revised in parallel session to S2-166019.	Revised	S2-166019
6.1	S2-166019	CR	23.303 CR0321R1	ASUSTeK	23.303	0321	1	A	14.0.0	Rel-	eProSe-Ext-SA2	Revision of	Agreed	

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			(Rel-14, 'A'): EPS bearer release for ProSe UE-to-Network Relay							14		S2-165541. This CR was agreed		
6.1	S2-166020	CR	23.303 CR0322 (Rel-13, 'F'): EPS bearer release for ProSe UE-to-Network Relay	ASUSTeK	23.303	0322	-	F	13.5.0	Rel-13	eProSe-Ext-SA2	Created in parallel session. This CR was agreed	Agreed	
6.1	S2-165700	CR	23.246 CR0405 (Rel-14, 'F'): Corrections of MBMS Shared Network	Huawei, HiSilicon	23.246	0405	-	F	14.0.0	Rel-14	AE_enTV	Revised in parallel session to S2-166021.	Revised	S2-166021
6.1	S2-166021	CR	23.246 CR0405R1 (Rel-14, 'F'): Corrections of MBMS Shared Network	Huawei, HiSilicon	23.246	0405	1	F	14.0.0	Rel-14	AE_enTV	Revision of S2-165700. This CR was agreed	Agreed	
6.1	S2-165859	CR	23.682 CR0245 (Rel-14, 'F'): Active Time correction in UE Power Save Mode	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0245	-	F	14.1.0	Rel-14	TEI14	Revised in parallel session to S2-166022.	Revised	S2-166022
6.1	S2-166022	CR	23.682 CR0245R1 (Rel-14, 'A'): Active Time correction in UE Power Save Mode	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0245	1	A	14.1.0	Rel-14	TEI13	Revision of S2-165859. This CR was agreed	Agreed	
6.1	S2-166023	CR	23.682 CR0246 (Rel-13, 'F'): Active Time correction in UE Power Save Mode	Nokia, Alcatel-Lucent Shanghai Bell	23.682	0246	-	F	13.7.0	Rel-13	TEI13	Created in parallel session. This CR was agreed	Agreed	
6.2	S2-165479	LS In	LS from SA WG4: LS on QCI for CLUE Messages	SA WG4	-	-	-	-	-			Response drafted in parallel session in S2-166090. Final response in S2-166287	Replied to	
6.2	S2-166090	LS OUT	Reply LS on QCI for CLUE Messages	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Response to S2-165479. This was left for e-mail	Revised	S2-166287

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
												approval. Revision 1 approved. Revised to S2-166287.		
6.2	S2-166287	LS OUT	Reply LS on QCI for CLUE Messages	SA WG2	-	-	-	-	-	-	-	Response to S2-165479. e-mail revision 1 of S2-166090. Approved	Approved	
6.2	S2-165664	DISCUSSION	SDCI Pull and Push Mode Optimization	Nokia	-	-	-	-	-	Rel-14	SDCI	Noted in parallel session	Noted	
6.2	S2-165665	CR	23.203 CR1067 (Rel-14, 'F'): Optimization for push mode and combination of pull and push mode	Nokia, Alcatel-Lucent Shanghai Bell	23.203	1067	-	F	14.1.0	Rel-14	SDCI	Noted in parallel session	Noted	
6.2	S2-165699	CR	23.203 CR1068 (Rel-14, 'B'): QCI or/and ARP of the Default EPS Bearer change at a certain time on Gx	Verizon, Oracle, Nokia	23.203	1068	-	B	14.1.0	Rel-14	TEI14	Revised in parallel session to S2-166091.	Revised	S2-166091
6.2	S2-166091	CR	23.203 CR1068R1 (Rel-14, 'B'): QCI or/and ARP of the Default EPS Bearer change at a certain time on Gx	Verizon, Oracle, Nokia	23.203	1068	1	B	14.1.0	Rel-14	TEI14	Revision of S2-165699. WITHDRAWN (not provided)	Withdrawn	
6.4	S2-165903	LS In	LS from ETSI STQ: LS on IMS settings for UE testing	ETSI STQ	-	-	-	-	-			LATE DOC: Rx 16/10, 11:00. Not Handled. Postponed to meeting #118.	Postponed	
6.4	S2-165573	LS OUT	[Draft] Additional information on Emergency numbers in IR.21	TELECOM ITALIA S.p.A.	-	-	-	-	-		V8	Response to S2-164307 (already replied to at S2#116BIS in S2-165433). Revised in	Revised	S2-165943

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
												parallel session to S2-165943.		
6.4	S2-165943	LS OUT	[Draft] Additional information on Emergency numbers in IR.21	TELECOM ITALIA S.p.A.	-	-	-	-	-	-	V8	Revision of S2-165573. Revised in parallel session to S2-165966.	Revised	S2-165966
6.4	S2-165966	LS OUT	Additional information on Emergency numbers in IR.21	SA WG2	-	-	-	-	-	-	V8	Revision of S2-165943. Agreed in parallel session Block approved	Approved	
6.4	S2-165849	CR	23.167 CR0306 (Rel-14, 'F'): Correction from IMPI to IMPU	NTT DOCOMO	23.167	0306	-	F	14.1.0	Rel-14	V8	Revised in parallel session to S2-165945.	Revised	S2-165945
6.4	S2-165945	CR	23.167 CR0306R1 (Rel-14, 'F'): Correction from IMPI to IMPU	NTT DOCOMO	23.167	0306	1	F	14.1.0	Rel-14	V8	Revision of S2-165849. Agreed in parallel session Block approved	Agreed	
6.4	S2-165850	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Response to S2-165484. Revised in parallel session to S2-165946.	Revised	S2-165946
6.4	S2-165946	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Revision of S2-165850. Revised in parallel session to S2-166160.	Revised	S2-166160
6.4	S2-166160	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Revision of S2-165946. Revised in parallel session to S2-166231.	Revised	S2-166231
6.4	S2-166231	LS OUT	Completion of SA WG3-LI Study TR 33.827 on S8HR	NTT DOCOMO	-	-	-	-	-	Rel-14	V8	Revision of S2-166160. Agreed in parallel	Approved	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
												session Block approved		
6.4	S2-165635	CR	23.237 CR0498 (Rel-14, 'F'): Robust Call Setup for VoLTE subscriber in LTE	Huawei, HiSilicon	23.237	0498	-	F	14.1.0	Rel-14	RobVoLTE	Revised in parallel session to S2-165944.	Revised	S2-165944
6.4	S2-165944	CR	23.237 CR0498R1 (Rel-14, 'F'): Robust Call Setup for VoLTE subscriber in LTE	Huawei, HiSilicon	23.237	0498	1	F	14.1.0	Rel-14	RobVoLTE	Revision of S2-165635. Agreed in parallel session Block approved	Agreed	
6.4	S2-165652	CR	23.292 CR0239 (Rel-14, 'F'): Correction of ICS IWF behaviour for inbound roamers	NEC	23.292	0239	-	F	14.0.0	Rel-14	SeDoC	Revised in parallel session to S2-165923.	Revised	S2-165923
6.4	S2-165923	CR	23.292 CR0239R1 (Rel-14, 'F'): Correction of ICS IWF behaviour for inbound roamers	NEC, Deutsche Telekom AG	23.292	0239	1	F	14.0.0	Rel-14	SeDoC	Revision of S2-165652. Agreed in parallel session Block approved	Agreed	
6.4	S2-165796	CR	23.167 CR0305 (Rel-14, 'F'): Update with SEW2 capabilities	Nokia	23.167	0305	-	F	14.1.0	Rel-14	SEW2	Revised in parallel session to S2-165947.	Revised	S2-165947
6.4	S2-165947	CR	23.167 CR0305R1 (Rel-14, 'F'): Update with SEW2 capabilities	Nokia	23.167	0305	1	F	14.1.0	Rel-14	SEW2	Revision of S2-165796. Agreed in parallel session Block approved	Agreed	
6.4	S2-165798	CR	23.237 CR0499 (Rel-14, 'F'): DRVCC for emergency call with S2a/S2b only	Nokia	23.237	0499	-	F	14.1.0	Rel-14	SEW2	Agreed in parallel session Block approved	Agreed	
6.8	S2-165876	DISCUSSION	Discussion on Sx Parameters	Huawei	-	-	-	-	-	Rel-14	CUPS	Noted in parallel session	Noted	
6.8	S2-165877	CR	23.214 CR0011 (Rel-14, 'B'): Sx Parameters	Huawei, HiSilicon	23.214	0011	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to	Revised	S2-166071

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												S2-166071.		
6.8	S2-166071	CR	23.214 CR0011R1 (Rel-14, 'B'): Sx Parameters	Huawei, HiSilicon	23.214	0011	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165877. WITHDRAWN (not provided)	Withdrawn	
6.8	S2-165554	CR	23.214 CR0004 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166059.	Revised	S2-166059
6.8	S2-166059	CR	23.214 CR0004R1 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165554. Revised in parallel session to S2-166177.	Revised	S2-166177
6.8	S2-166177	CR	23.214 CR0004R2 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	2	B	14.0.0	Rel-14	CUPS	Revision of S2-166059. Revised in parallel session to S2-166179.	Revised	S2-166179
6.8	S2-166179	CR	23.214 CR0004R3 (Rel-14, 'B'): Sx parameter corrections	Ericsson	23.214	0004	3	B	14.0.0	Rel-14	CUPS	Revision of S2-166177. Revised to S2-166273.	Revised	S2-166273
6.8	S2-166273	CR	23.214 CR0004R4 (Rel-14, 'F'): Sx parameter corrections	Ericsson	23.214	0004	4	F	14.0.0	Rel-14	CUPS	Revision of S2-166179. This CR was agreed	Agreed	
6.8	S2-165495	DISCUSSION	Controlling the UP to buffer, drop or duplicate data packets	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-			Noted in parallel session	Noted	
6.8	S2-165496	CR	23.214 CR0001 (Rel-14, 'F'): Controlling the UP to buffer, drop or duplicate data packets	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0001	-	F	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166060.	Revised	S2-166060
6.8	S2-166060	CR	23.214 CR0001R1 (Rel-14, 'F'): Controlling the UP to buffer, drop or duplicate data packets	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0001	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165496. Revised in parallel session to S2-166176.	Revised	S2-166176
6.8	S2-166176	CR	23.214 CR0001R2 (Rel-14, 'F'): Controlling the UP	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0001	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166060. Noted in	Noted	

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			to buffer, drop or duplicate data packets									parallel session		
6.8	S2-165556	DISCUSSION	Discussion on mandatory support for TEID management and UP buffering	Ericsson	-	-	-	-	-	Rel-14	CUPS	Noted in parallel session	Noted	
6.8	S2-165875	CR	23.214 CR0010 (Rel-14, 'B'): Buffering and F-TEIDu Allocation	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	23.214	0010	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166061.	Revised	S2-166061
6.8	S2-166061	CR	23.214 CR0010R1 (Rel-14, 'B'): Buffering and F-TEIDu Allocation	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	23.214	0010	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165875. Revised in parallel session to S2-166175.	Revised	S2-166175
6.8	S2-166175	CR	23.214 CR0010R2 (Rel-14, 'B'): Buffering and F-TEIDu Allocation	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	23.214	0010	2	B	14.0.0	Rel-14	CUPS	Revision of S2-166061. Agreed in parallel session Block approved	Agreed	
6.8	S2-165498	DISCUSSION	Discussion on buffering in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-			Noted in parallel session	Noted	
6.8	S2-165499	CR	23.214 CR0003 (Rel-14, 'F'): Corrections to buffering in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0003	-	F	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166062.	Revised	S2-166062
6.8	S2-166062	CR	23.214 CR0003R1 (Rel-14, 'F'): Corrections to buffering in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0003	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165499. Revised in parallel session to S2-166174.	Revised	S2-166174
6.8	S2-166174	CR	23.214 CR0003R2 (Rel-14, 'F'): Corrections to buffering in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0003	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166062. Agreed in parallel session Block approved	Agreed	
6.8	S2-165497	CR	23.214 CR0002 (Rel-14, 'F'):	Nokia, Alcatel-Lucent Shanghai	23.214	0002	-	F	14.0.0	Rel-14	CUPS	Revised in parallel	Revised	S2-166064

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			Corrections to User Plane selection function	Bell								session to S2-166064.		
6.8	S2-166064	CR	23.214 CR0002R1 (Rel-14, 'F'): Corrections to User Plane selection function	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0002	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165497. Revised in parallel session to S2-166078.	Revised	S2-166078
6.8	S2-166078	CR	23.214 CR0002R2 (Rel-14, 'F'): Corrections to User Plane selection function	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0002	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166064. Agreed in parallel session Block approved	Agreed	
6.8	S2-165746	CR	23.214 CR0007 (Rel-14, 'C'): Update to UP Selection Section	Samsung	23.214	0007	-	C	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166063.	Revised	S2-166063
6.8	S2-166063	CR	23.214 CR0007R1 (Rel-14, 'C'): Update to UP Selection Section	Samsung	23.214	0007	1	C	14.0.0	Rel-14	CUPS	Revision of S2-165746. Revised in parallel session to S2-166077.	Revised	S2-166077
6.8	S2-166077	CR	23.214 CR0007R2 (Rel-14, 'F'): Update to UP Selection Section	Samsung	23.214	0007	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166063. Agreed in parallel session Block approved	Agreed	
6.8	S2-165888	CR	23.214 CR0014 (Rel-14, 'B'): Solution of TDF-U Selection in case of Unsolicited Reporting	Huawei, HiSilicon	23.214	0014	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166065.	Revised	S2-166065
6.8	S2-166065	CR	23.214 CR0014R1 (Rel-14, 'B'): Solution of TDF-U Selection in case of Unsolicited Reporting	Huawei, HiSilicon	23.214	0014	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165888. Revised in parallel session to S2-166076.	Revised	S2-166076
6.8	S2-166076	CR	23.214 CR0014R2 (Rel-14, 'F'): Solution of TDF-U Selection in case	Huawei, HiSilicon	23.214	0014	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166065. Revised in parallel	Revised	S2-166215

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			of Unsolicited Reporting									session to S2-166215.		
6.8	S2-166215	CR	23.214 CR0014R3 (Rel-14, 'F'): Solution of TDF-U Selection in case of Unsolicited Reporting	Huawei, HiSilicon	23.214	0014	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166076. Agreed in parallel session Block approved	Agreed	
6.8	S2-165663	CR	23.214 CR0006 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	-	F	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166066.	Revised	S2-166066
6.8	S2-166066	CR	23.214 CR0006R1 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165663. Revised in parallel session to S2-166178.	Revised	S2-166178
6.8	S2-166178	CR	23.214 CR0006R2 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166066. Revised in parallel session to S2-166214.	Revised	S2-166214
6.8	S2-166214	CR	23.214 CR0006R3 (Rel-14, 'F'): Update to PCC/ADC related functions	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0006	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166178. This CR was agreed	Agreed	
6.8	S2-165886	CR	23.214 CR0012 (Rel-14, 'B'): Support of PGW Pause of Charging	Huawei, HiSilicon	23.214	0012	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166067.	Revised	S2-166067
6.8	S2-166067	CR	23.214 CR0012R1 (Rel-14, 'B'): Support of PGW Pause of Charging	Huawei, HiSilicon	23.214	0012	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165886. Revised in parallel session to S2-166075.	Revised	S2-166075
6.8	S2-166075	CR	23.214 CR0012R2 (Rel-14, 'F'): Support of PGW Pause of Charging	Huawei, HiSilicon	23.214	0012	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166067. Revised in parallel session to S2-166213.	Revised	S2-166213
6.8	S2-166213	CR	23.214 CR0012R3 (Rel-14, 'F'):	Huawei, HiSilicon	23.214	0012	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166075.	Agreed	

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			Support of PGW Pause of Charging									Agreed in parallel session Block approved		
6.8	S2-165750	CR	23.214 CR0008 (Rel-14, 'C'): Text updates for 3GPP TS 23.401 call flows	Samsung	23.214	0008	-	C	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166068.	Revised	S2-166068
6.8	S2-166068	CR	23.214 CR0008R1 (Rel-14, 'F'): Text updates for 3GPP TS 23.401 call flows	Samsung	23.214	0008	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165750. Revised in parallel session to S2-166074.	Revised	S2-166074
6.8	S2-166074	CR	23.214 CR0008R2 (Rel-14, 'F'): Text updates for 3GPP TS 23.401 call flows	Samsung	23.214	0008	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166068. Agreed in parallel session Block approved	Agreed	
6.8	S2-165753	CR	23.214 CR0009 (Rel-14, 'C'): Text updates for 3GPP TS 23.402 call flows	Samsung	23.214	0009	-	C	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166069.	Revised	S2-166069
6.8	S2-166069	CR	23.214 CR0009R1 (Rel-14, 'F'): Text updates for 3GPP TS 23.402 call flows	Samsung	23.214	0009	1	F	14.0.0	Rel-14	CUPS	Revision of S2-165753. Revised in parallel session to S2-166073.	Revised	S2-166073
6.8	S2-166073	CR	23.214 CR0009R2 (Rel-14, 'F'): Text updates for 3GPP TS 23.402 call flows	Samsung	23.214	0009	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166069. Agreed in parallel session Block approved	Agreed	
6.8	S2-165887	CR	23.214 CR0013 (Rel-14, 'B'): Sx Session Level Reporting Procedure Update	Huawei, HiSilicon	23.214	0013	-	B	14.0.0	Rel-14	CUPS	Revised in parallel session to S2-166070.	Revised	S2-166070
6.8	S2-166070	CR	23.214 CR0013R1 (Rel-14, 'B'): Sx Session Level	Huawei, HiSilicon	23.214	0013	1	B	14.0.0	Rel-14	CUPS	Revision of S2-165887. Revised in	Revised	S2-166072

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			Reporting Procedure Update									parallel session to S2-166072.		
6.8	S2-166072	CR	23.214 CR0013R2 (Rel-14, 'F'): Sx Session Level Reporting Procedure Update	Huawei, HiSilicon	23.214	0013	2	F	14.0.0	Rel-14	CUPS	Revision of S2-166070. Agreed in parallel session. Revised to S2-166274.	Revised	S2-166274
6.8	S2-166274	CR	23.214 CR0013R3 (Rel-14, 'F'): Sx Session Level Reporting Procedure Update	Huawei, HiSilicon	23.214	0013	3	F	14.0.0	Rel-14	CUPS	Revision of S2-166072. This was left for e-mail approval. e-mail approved. This CR was agreed	Agreed	
6.8	S2-165555	DISCUSSION	CUPS and SDCI interactions	Ericsson	-	-	-	-	-	Rel-14	CUPS	Noted in parallel session	Noted	
6.8	S2-165661	DISCUSSION	Functional split for SDCI	Nokia	-	-	-	-	-	Rel-14	CUPS	Noted in parallel session	Noted	
6.8	S2-165662	CR	23.214 CR0005 (Rel-14, 'B'): SDCI support	Nokia, Alcatel-Lucent Shanghai Bell	23.214	0005	-	B	14.0.0	Rel-14	CUPS	Noted in parallel session	Noted	
6.10	S2-165774	LS IN	LS from ETSI NFV: LS OUT on NFV-based solutions for next generation mobile networks	ETSI NFV	-	-	-	-	-			This LS was postponed to meeting SA WG2#118.	Postponed	
6.10	S2-165477	LS In	LS from SA WG1: LS on 5G work alignment	SA WG1	-	-	-	-	-	Rel-15	SMARTER	Revision of S2-164972. Response drafted in S2-165915. Final response in S2-166238.	Replied to	
6.10	S2-165915	LS OUT	[DRAFT] LS reply on 5G work alignment	SA WG2	-	-	-	-	-		FS_NextGen, SMARTER	Response to S2-165477. Revised to S2-166238.	Revised	S2-166238
6.10	S2-166238	LS OUT	LS reply on 5G work alignment	SA WG2	-	-	-	-	-		FS_NextGen, SMARTER	Revision of S2-165915. Agreed in	Approved	

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												parallel session Block approved		
6.10	S2-165489	LS In	LS from ITU-R WP 4B: INVITATION TO CONSIDER INTEGRATION OF SATELLITE-BASED SOLUTIONS INTO IMT-2020 NETWORKS	ITU-R WP 4B	-	-	-	-	-			Noted	Noted	
6.10	S2-165491	LS In	LS from SA WG3: LS on NG authentication functions	SA WG3	-	-	-	-	-		FS_NSA	Noted	Noted	
6.10	S2-165492	LS In	LS from SA WG3: Update on definitions of identifiers	SA WG3	-	-	-	-	-	Rel-14	FS_NSA	Noted	Noted	
6.10	S2-165640	P-CR	Correction of implementation error	LG Electronics	23.799	-	-	-	-		FS_NextGen	Approved	Approved	
6.10	S2-165566	LS OUT	LS to GSMA on NextGen Roaming	AT&T	-	-	-	-	-	Rel-14		Revised to S2-165916.	Revised	S2-165916
6.10	S2-165916	LS OUT	[DRAFT] LS to GSMA on Next Generation Roaming	SA WG2	-	-	-	-	-	Rel-14		Revision of S2-165566. Revised to S2-166239.	Revised	S2-166239
6.10	S2-166239	LS OUT	[DRAFT] LS to GSMA on Next Generation Roaming	SA WG2	-	-	-	-	-	Rel-14		Revision of S2-165916. This was left for e-mail approval. e-mail revision 2 approved. Revised to S2-166290.	Revised	S2-166290
6.10	S2-166290	LS OUT	LS to GSMA on Next Generation Roaming	SA WG2	-	-	-	-	-	Rel-14		e-mail revision 2 of S2-166239. Approved	Approved	
6.10	S2-165483	LS In	LS from TSG SA: Reply LS on Cooperation on NGS FMC	TSG SA	-	-	-	-	-	Rel-14	FS_NextGen	Noted	Noted	
6.10	S2-166145	OTHER	NextGen questions for	Rapporteurs (Nokia)	-	-	-	-	-		FS_NextGen	Revised to S2-166147.	Revised	S2-166147

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			conclusion											
6.10	S2-166147	OTHER	NextGen questions for conclusion	Drafting convenor (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166145. Revised to S2-166172.	Revised	S2-166172
6.10	S2-166172	OTHER	NextGen questions for conclusion - updated during Thu Q1 session	Rapporteurs (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166147. Endorsed and the agreements were extracted for inclusion in the TR in S2-166173	Endorsed	
6.10	S2-166173	P-CR	Interim agreements Extracted from Show of hands on Thursday, October 20	Nokia	23.799	-	-	-	-		FS_NextGen	Revised to S2-166237.	Revised	S2-166237
6.10	S2-166237	P-CR	Interim agreements Extracted from Show of hands on Thursday, October 20	Rapporteurs (Nokia)	23.799	-	-	-	-		FS_NextGen	Revision of S2-166173. Agreed in parallel session Block approved	Approved	
6.10.1	S2-166051	DISCUSSION	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Drafting Editor (Nokia)	-	-	-	-	-		FS_NextGen	Created in drafting session. Revised to S2-166097.	Revised	S2-166097
6.10.1	S2-166097	DISCUSSION	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Drafting Editor (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166051. Revised in drafting session to S2-166024.	Revised	S2-166024
6.10.1	S2-166024	DISCUSSION	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Drafting Editor (Nokia)	-	-	-	-	-	-	FS_NextGen	Revision of S2-166097	Not handled.	

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6.10.1	S2-166146	DISCUSSION	Update to section 8.1.Interim Agreements based on drafting at SA WG2#117	Editor (Nokia)	-	-	-	-	-		FS_NextGen	Created at the meeting. Revised to S2-166210.	Revised	S2-166210
6.10.1	S2-166210	DISCUSSION	Update to section 8.1.Interim Agreements based on drafting at SA WG2#117	Editor (Nokia)	-	-	-	-	-		FS_NextGen	Revision of S2-166146. Agreed in parallel session Block approved	Approved	
6.10.1	S2-165904	LS In	LS from NGMN: Update to NGMN Description of Network Slicing Concept	NGMN	-	-	-	-	-			LATE DOC: Rx 16/10, 11:00. Incorrect attachment. Resubmitted in S2-166087.	Withdrawn	S2-166087
6.10.1	S2-166087	LS In	LS from NGMN: Update to NGMN Description of Network Slicing Concept	NGMN	-	-	-	-	-			LATE DOC: Rx 18/10, 11:20. Replacement of S2-165904 with correct attachment (161010 Network Slicing framework v1.0.8.docx). Not Handled. Postponed to meeting #118.	Postponed	
6.10.1	S2-166055	DISCUSSION	Observations on Network Slicing Approaches	Qualcomm Inc.	-	-	-	-	-		FS_NextGen	Created at meeting. Not Handled	Not Handled	
6.10.1	S2-165696	DISCUSSION	Network slicing way forward	Nokia, ZTE, Telecom Italia, KDDI, Interdigital, SAMSUNG, ETRI, KPN	-	-	-	-	-	Rel-14		Not Handled	Not Handled	
6.10.1	S2-165616	P-CR	Deprioritizing Group A architecture for	LG Electronics Inc., SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			network slicing											
6.10.1	S2-165698	P-CR	Interim Agreements based on Way forward on Solutions for Key Issue 1 on Network Slicing	Nokia, Telecom Italia, ZTE, InterDigital, KDDI, Samsung, ETRI, KPN	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165762	P-CR	Way forward on Solutions for Key Issue 1 on Network Slicing	Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165485	DISCUSSION	Recommended principles for network slicing	MediaTek Inc.	-	-	-	-	-	Rel-14		Not Handled	Not Handled	
6.10.1	S2-165684	P-CR	Interim Agreements - Network Slicing	Sprint, KDDI, ZTE, Interdigital, Telecom Italia, ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165659	P-CR	update of interim agreements on network slicing solution aspects	China Mobile	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165641	P-CR	Slice ID usage and clarification	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165690	P-CR	Update of interim agreements on network slicing	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165570	P-CR	Recommendations to address Network Slicing Solutions design differences	ETRI, ZTE Corporation	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 11/10, 19:40. Not Handled	Not Handled	
6.10.1	S2-165756	P-CR	Interim Agreements for network slicing	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165572	P-CR	Interim conclusions on Network Slicing	Intel	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165624	P-CR	PDU session identification over Multiple Slice	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165802	P-CR	Interim agreement: Determination of NSSAI based on UE policy	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revised to S2-166098.	Revised	S2-166098
6.10.1	S2-166098	P-CR	Interim agreement: Determination of NSSAI based on UE policy	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revision of S2-165802. WITHDRAWN (not	Withdrawn	

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												provided)		
6.10.1	S2-165834	P-CR	Interim agreements on network slicing	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165842	P-CR	The Granularity of Network Slicing	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165879	P-CR	Possible RAN use cases for slicing and other RAN impacts for RAN coordination	Nokia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165725	P-CR	Update of Network Slicing definitions	NTT DOCOMO, NEC	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165654	P-CR	Evaluation of roaming solution in 6.1.1	Huawei, HiSilicon, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165617	P-CR	Evaluation on solution 1.3	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165618	P-CR	Evaluation on solution 1.9	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165619	P-CR	Evaluation on solution 1.11	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165580	P-CR	Update to Solution 6.1.2 for Network Slicing	InterDigital, ZTE, Telecom Italia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165851	P-CR	Update on solution 1.2: Configuration of MDD in the UE for 3rd Party NW Slice	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165853	P-CR	Update on solution 1.2: Extending the Slice Type components of an MDD vector	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165754	P-CR	Home-routed PDU Session Request Procedure in roaming Network slicing support	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165691	P-CR	Update of Network slicing solution	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165724	P-CR	Update of Network Slicing Solution 1.3	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165897	P-CR	Update to 6.1.3.2 Function description	ITRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10	S2-165898	P-CR	Update to Solution	ITRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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.1			6.1.3: Reselection in Common Control Plane Function											
6.10.1	S2-165797	P-CR	Update to solution 6.1.3	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165660	P-CR	clarification of network slice ID in solution 1.6	China Mobile	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165615	P-CR	Clarification and evaluation on Solution 1.8	LG Electronics Inc.	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165826	P-CR	Network slice roaming support	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.1	S2-165910	DISCUSSION	Defining the LI Function for Network Slicing Solutions	OTD	-	-	-	-	-		FS_NextGen	LATE REQ. LATE DOC: Rx: 16/10, 11:50. Not Handled	Not Handled	
6.10.1	S2-166079	LS In	LS from NGMN Alliance Project P1: NGMN Paper on Edge Computing	NGMN Alliance Project P1	-	-	-	-	-			LATE DOC: Rx 18/10, 08:00. Not Handled. Postponed to meeting #118.	Postponed	
6.10.2	S2-165788	P-CR	Way forward proposal to progress the work on QoS	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	This is a way forward proposal and not a P-CR. Noted in parallel session	Noted	
6.10.2	S2-165782	P-CR	Some QoS features - Way forward proposal	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.2	S2-165835	DISCUSSION	Way forward on NextGen QoS Framework	Intel	-	-	-	-	-			Noted	Noted	
6.10.2	S2-165836	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165967.	Revised	S2-165967
6.10.2	S2-165967	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165836. Revised in parallel session to S2-166000.	Revised	S2-166000

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6.10.2	S2-166000	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165967. Revised in parallel session to S2-166184.	Revised	S2-166184
6.10.2	S2-166184	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-166000. Revised to S2-166271.	Revised	S2-166271
6.10.2	S2-166271	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-166184. This was left for e-mail approval. e-mail revision 4 approved. Revised to S2-166293.	Revised	S2-166293
6.10.2	S2-166293	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	e-mail revision 4 of S2-166271. Approved	Approved	
6.10.2	S2-165776	P-CR	Interim agreements for QoS framework	Nokia, Alcatel-Lucent Shanghai Bell, AT&T	23.799	-	-	-	-		FS_NextGen	Revised in parallel session, merging S2-165765and S2-165649, in S2-165968	Revised	S2-165968
6.10.2	S2-165968	P-CR	Interim agreements for QoS framework	Nokia, Alcatel-Lucent Shanghai Bell, AT&T	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165776, merging S2-165765 and S2-165649. Revised in parallel session to S2-166185.	Revised	S2-166185
6.10.2	S2-166185	P-CR	Interim agreements for QoS framework	Nokia, Alcatel-Lucent Shanghai Bell, AT&T	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165968. Approved	Approved	
6.10.2	S2-165539	P-CR	Interim Agreement on Reflective QoS	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165969.	Revised	S2-165969
6.10.2	S2-165969	P-CR	Interim Agreement on Reflective QoS	Ericsson	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165539.	Revised	S2-166186

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												Revised in parallel session to S2-166186.		
6.10.2	S2-166186	P-CR	Interim Agreement on Reflective QoS	Ericsson	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165969. Approved	Approved	
6.10.2	S2-165648	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165970.	Revised	S2-165970
6.10.2	S2-165970	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165648. Revised in parallel session to S2-166187.	Revised	S2-166187
6.10.2	S2-166187	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165970. Revised to S2-166272.	Revised	S2-166272
6.10.2	S2-166272	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-166187. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166294.	Revised	S2-166294
6.10.2	S2-166294	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	e-mail revision 1 of S2-166272. Approved	Approved	
6.10.2	S2-165653	P-CR	Update to Interim agreements on QoS framework - Reflective QoS	China Mobile	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165995.	Revised	S2-165995
6.10.2	S2-165995	P-CR	Update to Interim agreements on QoS framework - Reflective QoS	China Mobile	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165653. Noted in parallel session	Noted	
6.10.2	S2-165800	P-CR	Interim agreement on reflective QoS	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised in parallel session,	Revised	S2-165971

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												merging S2-165653, to S2-165971.		
6.10.2	S2-165971	P-CR	Interim agreement on reflective QoS	LG Electronics, China Mobile	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165800. Noted in parallel session	Noted	
6.10.2	S2-165763	P-CR	Additional interim agreements for QoS flow classification	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165996.	Revised	S2-165996
6.10.2	S2-165996	P-CR	Additional interim agreements for QoS flow classification	Qualcomm Inc.	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165763. WITHDRAWN (not provided)	Withdrawn	
6.10.2	S2-165764	P-CR	Additional interim agreements for QoS establishment	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165997.	Revised	S2-165997
6.10.2	S2-165997	P-CR	Additional interim agreements for QoS establishment	Qualcomm Inc.	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165764. Revised in parallel session to S2-166188.	Revised	S2-166188
6.10.2	S2-166188	P-CR	Additional interim agreements for QoS establishment	Qualcomm Inc.	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165997. Agreed in parallel session Block approved	Approved	
6.10.2	S2-165765	P-CR	Additional interim agreement for QoS on DNN-AMBR	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Merged in parallel session with S2-165776 into S2-165968.	Merged	
6.10.2	S2-165806	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165998.	Revised	S2-165998
6.10.2	S2-165998	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165806. Revised in parallel session to	Revised	S2-166189

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												S2-166189.		
6.10.2	S2-166189	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-165998. Revised to S2-166269.	Revised	S2-166269
6.10.2	S2-166269	P-CR	AMBR enforcement	ZTE Corporation	23.799	-	-	-	-	-	FS_NextGen	Revision of S2-166189. This was left for e-mail approval. e-mail approved	Approved	
6.10.2	S2-165649	P-CR	Update Interim Agreements on Key Issue #2 QoS	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Merged in parallel session with S2-165776 into S2-165968.	Merged	
6.10.2	S2-165837	LS OUT	[DRAFT] LS on NextGen QoS interim agreements	Intel	-	-	-	-	-			Revised in parallel session to S2-165999.	Revised	S2-165999
6.10.2	S2-165999	LS OUT	[DRAFT] LS on NextGen QoS interim agreements	Intel	-	-	-	-	-	-	-	Revision of S2-165837. Revised in parallel session to S2-166190.	Revised	S2-166190
6.10.2	S2-166190	LS OUT	[DRAFT] LS on NextGen QoS interim agreements	Intel	-	-	-	-	-	-	-	Revision of S2-165999. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166289.	Revised	S2-166289
6.10.2	S2-166289	LS OUT	LS on NextGen QoS interim agreements	SA WG2	-	-	-	-	-	-	-	e-mail revision 1 of S2-166190. Approved	Approved	
6.10.2	S2-165846	P-CR	Reviewing the benefit of Flow based QoS	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.2	S2-165847	P-CR	Additional interim agreements for Key Issues 2 and 4	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10	S2-165843	P-CR	Evaluation of	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.2			solution 6.2.2.											
6.10.2	S2-165538	P-CR	QoS: Clarifications and updates of solution 2.1	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165686	P-CR	Input to solution 5 for KI 2 on Dynamic QoS	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165808	P-CR	Clarification on UE AMBR when MM and SM are split	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165856	P-CR	Update to 6.2.4 : clarification and solution evaluation	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.2	S2-165872	P-CR	RAN triggered FPI change	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165785	DISCUSSION	Way forward proposal to progress the work on MM	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-		FS_NextGen	Revised to S2-166080.	Revised	S2-166080
6.10.3	S2-166080	DISCUSSION	Way forward proposal to progress the work on MM	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-		FS_NextGen	Revision of S2-165785. WITHDRAWN (not provided)	Withdrawn	
6.10.3	S2-165528	P-CR	Interim agreements on Reachability	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165677, to S2-166082.	Revised	S2-166082
6.10.3	S2-166082	P-CR	Interim agreements on Reachability	Ericsson, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165528, merging S2-165677. Revised to S2-166220.	Revised	S2-166220
6.10.3	S2-166220	P-CR	Interim agreements on Reachability	Ericsson, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166082. Approved	Approved	
6.10.3	S2-165677	P-CR	Interim agreements to support MO only mode	Sony	23.799	-	-	-	-		FS_NextGen	This was merged with S2-165528 into S2-166082.	Merged	
6.10.3	S2-165830	P-CR	Update of solution 6.3.6 and interim agreements for power saving	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised to S2-166081.	Revised	S2-166081
6.10.3	S2-166081	P-CR	Update of solution 6.3.6 and interim agreements for	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revision of S2-165830. Revised to	Revised	S2-166221

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			power saving									S2-166221.		
6.10.3	S2-166221	P-CR	Update of solution 6.3.6 and interim agreements for power saving	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revision of S2-166081. WITHDRAWN (not provided)	Withdrawn	
6.10.3	S2-165526	P-CR	Clarification of Interim Agreements on Mobility on Demand	Ericsson, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Revised to S2-166083.	Revised	S2-166083
6.10.3	S2-166083	P-CR	Clarification of Interim Agreements on Mobility on Demand	Ericsson, MediaTek Inc., Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165526. Revised to S2-166222.	Revised	S2-166222
6.10.3	S2-166222	P-CR	Clarification of Interim Agreements on Mobility on Demand	Ericsson, MediaTek Inc., Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166083. Approved	Approved	
6.10.3	S2-165761	P-CR	Separation of Mobility levels and Mobility restrictions	Sony, Ericsson, MediaTek Inc, Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Revised to S2-166084.	Revised	S2-166084
6.10.3	S2-166084	P-CR	Separation of Mobility levels and Mobility restrictions	Sony, Ericsson, MediaTek Inc, Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Revision of S2-165761. Agreed in parallel session Block approved	Approved	
6.10.3	S2-165791	P-CR	Update to interim agreements regarding MM	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
6.10.3	S2-165533	P-CR	Interim Agreements on Mobility Pattern	Ericsson, MediaTek Inc., Sony	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
6.10.3	S2-165720	P-CR	Clarifications and proposed way forward on Mobility Management Parameters - Key issue #3	Qualcomm Incorporated, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Parts merged into a consolidated proposal in S2-166085. Further	Revised	S2-166116

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												discussed off-line and revised, merging S2-165622, in S2-166116		
6.10.3	S2-166116	P-CR	Clarifications and proposed way forward on Mobility Management Parameters - Key issue #3	Qualcomm Incorporated, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-165720, merging S2-165622. Revised to S2-166223.	Revised	S2-166223
6.10.3	S2-166223	P-CR	Clarifications and proposed way forward on Mobility Management Parameters - Key issue #3	Qualcomm Incorporated, MediaTek Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-166116. Approved	Approved	
6.10.3	S2-165829	P-CR	Update of interim agreements on mobility on demand	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
6.10.3	S2-165863	P-CR	Proposed MMF evaluation criteria and MMF conclusions	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Merged into a consolidated proposal in S2-166085.	Merged	
6.10.3	S2-165532	P-CR	Interim Agreements on Mobility Restriction	Ericsson	23.799	-	-	-	-		FS_NextGen	Merged into S2-166085	Merged	
6.10.3	S2-165804	P-CR	Interim Agreements on Mobility Management Behaviours	Samsung	23.799	-	-	-	-		FS_NextGen	Merged into S2-166085	Merged	
6.10.3	S2-165678	P-CR	Interim agreements based on solution 6.3.11 and 6.3.21	Sony	23.799	-	-	-	-		FS_NextGen	Merged into S2-166085	Merged	
6.10.3	S2-166085	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	Editors	23.799	-	-	-	-		FS_NextGen	Created in off-line drafting. Revised to S2-166236.	Revised	S2-166236
6.10.3	S2-166236	P-CR	Consolidated proposals on Interim Agreements on	Editors	23.799	-	-	-	-		FS_NextGen	Revision of S2-166085. Revised to S2-166275.	Revised	S2-166275

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			Mobility Pattern											
6.10.3	S2-166275	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	CATT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166236. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166295.	Revised	S2-166295
6.10.3	S2-166295	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	CATT	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166275. Approved	Approved	
6.10.3	S2-165622	P-CR	Interim agreement on mobility management parameters	LG Electronics	23.799	-	-	-	-		FS_NextGen	Merged with S2-165720 into S2-166116	Merged	
6.10.3	S2-165621	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised to S2-166117.	Revised	S2-166117
6.10.3	S2-166117	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165621. Revised to S2-166224.	Revised	S2-166224
6.10.3	S2-166224	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166117. Revised to S2-166276.	Revised	S2-166276
6.10.3	S2-166276	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166224. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166296.	Revised	S2-166296
6.10.3	S2-166296	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166276. Approved	Approved	
6.10.3	S2-165825	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	Revised to S2-166119.	Revised	S2-166119
6.10.3	S2-166119	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	Revision of S2-165825. Revised to	Revised	S2-166225

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												S2-166225.		
6.10.3	S2-166225	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166119. Revised to S2-166277.	Revised	S2-166277
6.10.3	S2-166277	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166225. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166297.	Revised	S2-166297
6.10.3	S2-166297	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166277. Approved	Approved	
6.10.3	S2-165814	P-CR	Updated Solution 3.10 for CN Assisted Paging Retry	ETRI	23.799	-	-	-	-		FS_NextGen	Revised to S2-166120.	Revised	S2-166120
6.10.3	S2-166120	P-CR	Updated Solution 3.10 for CN Assisted Paging Retry	ETRI	23.799	-	-	-	-		FS_NextGen	Revision of S2-165814. Revised to S2-166226.	Revised	S2-166226
6.10.3	S2-166226	P-CR	Updated Solution 3.10 for CN Assisted Paging Retry	ETRI	23.799	-	-	-	-		FS_NextGen	Revision of S2-166120. Approved	Approved	
6.10.3	S2-165688	P-CR	UE reachability management in Inactive mode	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166121.	Revised	S2-166121
6.10.3	S2-166121	P-CR	UE reachability management in Inactive mode	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165688. Revised to S2-166227.	Revised	S2-166227
6.10.3	S2-166227	P-CR	UE reachability management in Inactive mode	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166121. Approved	Approved	
6.10.3	S2-165627	P-CR	Solution evaluation 6.3.12 'Solution for UE reachability in power saving state'	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised to S2-166122.	Revised	S2-166122
6.10.3	S2-166122	P-CR	Solution evaluation 6.3.12 'Solution for UE	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165627. Agreed in	Approved	

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			reachability in power saving state'									parallel session Block approved		
6.10.3	S2-165697	P-CR	Update of Dynamic Mobility Management	Deutsche Telekom, Telecom Italia, BT	23.799	-	-	-	-		FS_NextGen	Revised to S2-166123.	Revised	S2-166123
6.10.3	S2-166123	P-CR	Update of Dynamic Mobility Management	Deutsche Telekom, Telecom Italia, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-165697. WITHDRAWN (not provided)	Withdrawn	
6.10.3	S2-165783	P-CR	Intra-RAT Handover procedure	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166124.	Revised	S2-166124
6.10.3	S2-166124	P-CR	Intra-RAT Handover procedure	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165783. Agreed in parallel session Block approved	Approved	
6.10.3	S2-165862	P-CR	Addition of lightweight UE Status Update procedure at NG1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166125.	Revised	S2-166125
6.10.3	S2-166125	P-CR	Addition of lightweight UE Status Update procedure at NG1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165862. Agreed in parallel session Block approved	Approved	
6.10.3	S2-165839	P-CR	Multiple level Tracking area management and update the interim agreement on mobility management	Huawei, HiSilicon, China Mobile, China Unicom, China Telecom, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166228.	Revised	S2-166228
6.10.3	S2-166228	P-CR	Multiple level Tracking area management and update the interim agreement on mobility management	Huawei, HiSilicon, China Mobile, China Unicom, China Telecom, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165839. Revised to S2-166278.	Revised	S2-166278
6.10.3	S2-166278	P-CR	Multiple level Tracking area	Huawei, HiSilicon, China Mobile, China	23.799	-	-	-	-		FS_NextGen	Revision of S2-166228.	Approved	

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			management and update the interim agreement on mobility management	Unicom, China Telecom, CATR								Approved		
6.10.3	S2-165687	P-CR	Input on RAN Paging and functional division	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165628	P-CR	Solution evaluation '6.3.8: Simplified mobility states for stationary UE and MO data transmission only UE'	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165527	P-CR	Alignment of solution 3.9	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165790	P-CR	Discussion on mobility on demand	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165623	P-CR	Solution update & evaluation 6.3.16 Limited & Unlimited UE mobility level	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165529	P-CR	Clarifications of Mobility procedure	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165732	P-CR	Update the solution 6.3.19	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165795	P-CR	An alternative to Activate RRC_inactive_connected state	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165530	P-CR	Clarification of Solution 3.20	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165620	P-CR	Solution update & evaluation 6.3.23 Two layers Tracking Area handling	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165629	P-CR	New solution on 'Mobility framework for non-3GPP access'	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165828	P-CR	Update of Solution 6.3.24 Mobility pattern based mobility	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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			management											
6.10.3	S2-165695	P-CR	New Solution: UE-driven mobility handling during active sessions	Deutsche Telekom, Telecom Italia, SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165779	P-CR	Connected mode MM for multiple parallel sessions	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165781	P-CR	Enhanced X2-based handover with multiple parallel PDN connections	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165784	P-CR	TUPF relocation during the HO procedure	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.3	S2-165803	P-CR	NG3-based Handover procedure	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165559	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166049.	Revised	S2-166049
6.10.4	S2-166049	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165559. Revised to S2-166240.	Revised	S2-166240
6.10.4	S2-166240	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166049. Revised to S2-166279.	Revised	S2-166279
6.10.4	S2-166279	P-CR	PDU Session IP version handling	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166240. Approved	Approved	
6.10.4	S2-165588	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166052.	Revised	S2-166052
6.10.4	S2-166052	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165588. Revised to S2-166280.	Revised	S2-166280
6.10	S2-166280	P-CR	Interim agreement	Nokia, Alcatel-	23.799	-	-	-	-		FS_NextGen	Revision of	Revised	S2-166298

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.4			for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Lucent Shanghai Bell								S2-166052. This was left for e-mail approval. e-mail revision 5 approved. Revised to S2-166298.		
6.10 .4	S2-166298	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	e-mail revision 5 of S2-166280. Approved	Approved	
6.10 .4	S2-165693	P-CR	Update to Interim Agreements on MM and SM interaction	Deutsche Telekom AG	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10 .4	S2-165642	P-CR	SM and MM decoupling	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Response contribution in S2-165911. Noted in parallel session	Noted	
6.10 .4	S2-165911	DISCUSSION	Reply / answer to S2-165642: SM and MM decoupling	Nokia	-	-	-	-	-		FS_NextGen	LATE REQ. LATE DOC: Rx 17/10, 08:20. Not Handled	Not Handled	
6.10 .4	S2-165596	P-CR	Evaluation on subscription information access in MM-SM split architecture	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165589, to S2-166053.	Revised	S2-166053
6.10 .4	S2-166053	P-CR	Evaluation on subscription information access in MM-SM split architecture	LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165596, merging S2-165589. Agreed in parallel session Block approved	Approved	
6.10 .4	S2-165557	P-CR	Solution updates to MM-SM split	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166054.	Revised	S2-166054
6.10	S2-166054	P-CR	Solution updates	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of	Approved	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.4			to MM-SM split									S2-165557. Agreed in parallel session Block approved		
6.10.4	S2-165589	P-CR	MM-SM split: SMF access to subscription data	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Merged with S2-165596 into S2-166053	Merged	
6.10.4	S2-165749	P-CR	Interim agreement on infrequent small data transmission transferring NextGen system	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165656	P-CR	Update of Solution 6.4.19 with evaluation and update interim agreement	Huawei, HiSilicon, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165676	P-CR	Interim agreement to use UP for small data transfer	Sony, Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165831	P-CR	Interim agreement on the infrequent small data transferring	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165594	P-CR	Principle and Interim agreements on non-3GPP access aspects	LG Electronics	23.799	-	-	-	-		FS_NextGen	Postponed	Postponed	
6.10.4	S2-165682	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165881, to S2-166108.	Revised	S2-166108
6.10.4	S2-166108	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-165682, merging S2-165881. Revised to S2-166241.	Revised	S2-166241
6.10.4	S2-166241	P-CR	Solution evaluation and	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166108.	Revised	S2-166260

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)									Revised off-line in S2-166260.		
6.10.4	S2-166260	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	Revision of S2-166241. This was left for e-mail approval. e-mail revision 5 approved. Revised to S2-166291.	Revised	S2-166291
6.10.4	S2-166291	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	e-mail revision 5 of S2-166260. Approved	Approved	
6.10.4	S2-165646	P-CR	Update the Interim agreement on session management and the solution 4.23.	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Postponed	Postponed	
6.10.4	S2-165560	P-CR	Interim conclusions on user plane format	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166111.	Revised	S2-166111
6.10.4	S2-166111	P-CR	Interim conclusions on user plane format	Ericsson, Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165560. Revised to S2-166242.	Revised	S2-166242
6.10.4	S2-166242	P-CR	Interim conclusions on user plane format	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-166111. Agreed in parallel session Block approved	Approved	
6.10.4	S2-165655	P-CR	Updates of per node-level tunnel model and interim agreement	Huawei, HiSilicon, China Mobile, CATR	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165507 and S2-165751, to S2-166110.	Revised	S2-166110
6.10.4	S2-166110	P-CR	Updates of per node-level tunnel model and interim	Huawei, HiSilicon, China Mobile, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165655, merging S2-	Withdrawn	

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			agreement									165507 and S2-165751. WITHDRAWN		
6.10.4	S2-165718	P-CR	Updated interim agreements on session management	NEC, NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Revised to S2-166109.	Revised	S2-166109
6.10.4	S2-166109	P-CR	Updated interim agreements on session management	NEC, NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Revision of S2-165718. Revised to S2-166281.	Revised	S2-166281
6.10.4	S2-166281	P-CR	Updated interim agreements on session management	NEC, NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Revision of S2-166109. Approved	Approved	
6.10.4	S2-165507	P-CR	update and evaluation of Solution 4.11 (work task1)	KDDI, ETRI, China Mobile, KPN	23.799	-	-	-	-		FS_NextGen	Merged with S2-165655 into S2-166110	Merged	
6.10.4	S2-165751	P-CR	Solution update of UP protocol model - Per Node-level Tunnel	LG Electronics	23.799	-	-	-	-		FS_NextGen	Merged with S2-165655 into S2-166110.	Merged	
6.10.4	S2-165586	P-CR	Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166112.	Revised	S2-166112
6.10.4	S2-166112	P-CR	Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165586. Revised to S2-166243.	Revised	S2-166243
6.10.4	S2-166243	P-CR	Interim agreement and Update of Solution 4.2: Session setup procedures (Home Routed)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166112. Approved	Approved	
6.10.4	S2-165890	P-CR	Interim Agreements of Key Issue 4	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Postponed	Postponed	
6.10.4	S2-165766	P-CR	Way forward on Key Issue 4 on Session Management for	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revised to S2-166113.	Revised	S2-166113

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			WT1 and WT2											
6.10.4	S2-166113	P-CR	Way forward on Key Issue 4 on Session Management for WT1 and WT2	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-165766. Revised to S2-166245.	Revised	S2-166245
6.10.4	S2-166245	P-CR	Way forward on Key Issue 4 on Session Management for WT1 and WT2	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	Revision of S2-166113. Agreed in parallel session Block approved	Approved	
6.10.4	S2-165585	P-CR	Interim Agreements on Session Management (Key Issue #4)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166114.	Revised	S2-166114
6.10.4	S2-166114	P-CR	Interim Agreements on Session Management (Key Issue #4)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165585. Revised to S2-166244.	Revised	S2-166244
6.10.4	S2-166244	P-CR	Interim Agreements on Session Management (Key Issue #4)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166114. Agreed in parallel session Block approved	Approved	
6.10.4	S2-165833	P-CR	Clarification for SM Selection by MM	ETRI, ZTE, Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165742	P-CR	Evaluation update of Solution 4.7: Infrequent small data transfer	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165745	P-CR	Evaluation of Solution 4.8: for Data transmission with ConnectionLess RAN-Core interface	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165747	P-CR	Evaluation of Solution 4.18: Solution for Infrequent Small Data	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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6.10.4	S2-165748	P-CR	Solution update and evaluation of Solution 4.19: Infrequent small user data transfer via control plane	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165558	P-CR	Updates to solution 6.6.3: Multi-homing over multiple PDU sessions with network-provided routing rules	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165757	P-CR	Session management for connectionless transmission	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165845	P-CR	Clarifications and evaluation for Per QoS class tunnel protocol model	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165844	P-CR	Use of DC with Solution 4.10.	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165587	P-CR	Update of Solution 4.13: how to choose which of the UP-GW IP anchors visible to the UE is to be used as the most preferred default router	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165758	P-CR	Session management for network based ultra-reliable transmission	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165733	P-CR	Update on solution 4.16: the interaction between MM and SM	Samsung, ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165773	P-CR	Update to Solution 4.16: the interaction between MM and SM	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165561	P-CR	Update to Solution 4.18 for Infrequent	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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			Small Data											
6.10.4	S2-165597	P-CR	Clarification and evaluation about solution 4.20 (Session Management on the PDU session(s) via different accesses)	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165866	P-CR	Delete an editor's note in solution 4.21	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165719	P-CR	Updates to Solution 4.22	NEC	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165730	P-CR	Update of solution 4.21 and 4.22 relating to paging	Samsung, ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165595	P-CR	Update of Solution 4.23: Asynchronous Session Management Model	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165598	P-CR	Clarification and evaluation about solution 4.24 (Session Management with individual CP function per access network)	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165546	P-CR	Update to Solution 4.25: Local Area Data Network	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.4	S2-165865	P-CR	Routing of the SM message	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165579	P-CR	Updated Interim Agreements related to selection/reselection of U-plane function	KDDI, Sprint, China Unicom	23.799	-	-	-	-		FS_NextGen	Merged with S2-165889 into S2-166094	Merged	
6.10.6	S2-165590	P-CR	Interim Agreements on Session Management (Key Issue 5 and 6)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165626 and S2-165780, to S2-166086.	Revised	S2-166086
6.10	S2-166086	P-CR	Interim	Nokia, Alcatel-	23.799	-	-	-	-		FS_NextGen	Revision of	Revised	S2-166246

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.6			Agreements on Session Management (Key Issue 5 and 6)	Lucent Shanghai Bell, LGE								S2-165590, merging S2-165626, S2-165780 and S2-165811. Revised to S2-166246.		
6.10.6	S2-166246	P-CR	Interim Agreements on Session Management (Key Issue 5 and 6)	Nokia, Alcatel-Lucent Shanghai Bell, LGE, Intel	23.799	-	-	-	-		FS_NextGen	Revision of S2-166086. Approved	Approved	
6.10.6	S2-165626	P-CR	Interim agreement on Session and Service Continuity	LG Electronics	23.799	-	-	-	-		FS_NextGen	Merged with S2-165590 into S2-166086.	Merged	
6.10.6	S2-165780	P-CR	Interim agreement on SSC mode to support Key issue 6	CATT	23.799	-	-	-	-		FS_NextGen	Merged with S2-165590 into S2-166086.	Merged	
6.10.6	S2-165799	P-CR	Interim agreement on how the UE determines the SSC mode	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revised to S2-166093.	Revised	S2-166093
6.10.6	S2-166093	P-CR	Interim agreement on how the UE determines the SSC mode	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revision of S2-165799. Revised to S2-166247.	Revised	S2-166247
6.10.6	S2-166247	P-CR	Interim agreement on how the UE determines the SSC mode	Motorola Mobility, Lenovo	23.799	-	-	-	-		FS_NextGen	Revision of S2-166093. Agreed in parallel session Block approved	Approved	
6.10.6	S2-165889	P-CR	Interim Agreements for KI 6	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised to S2-166094.	Revised	S2-166094
6.10.6	S2-166094	P-CR	Interim Agreements for KI 6	Huawei, HiSilicon, KDDI, Sprint	23.799	-	-	-	-		FS_NextGen	Revision of S2-165889, merging S2-165579. Revised to S2-166248.	Revised	S2-166248
6.10.6	S2-166248	P-CR	Interim Agreements for KI 6	Huawei, HiSilicon, KDDI, Sprint	23.799	-	-	-	-		FS_NextGen	Revision of S2-166094. Agreed in parallel session	Approved	

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												Block approved		
6.10.6	S2-165811	P-CR	Relationship between SSC mode and SM models	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Merged with S2-165590 into S2-166086.	Merged	
6.10.6	S2-165547	P-CR	Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths	InterDigital	23.799	-	-	-	-		FS_NextGen	Revised to S2-166095.	Revised	S2-166095
6.10.6	S2-166095	P-CR	Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths	InterDigital	23.799	-	-	-	-		FS_NextGen	Revision of S2-165547. Error in uploaded document. Revised in S2-166235.	Revised	S2-166235
6.10.6	S2-166235	P-CR	Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths	InterDigital	23.799	-	-	-	-		FS_NextGen	Revision of S2-166095. Revised to S2-166249.	Revised	S2-166249
6.10.6	S2-166249	P-CR	Update to Solution 5.1 - Session continuity to enable (re) selection of efficient user plane paths	InterDigital	23.799	-	-	-	-		FS_NextGen	Revision of S2-166235. Approved	Approved	
6.10.6	S2-165591	P-CR	Updates to solution 6.6.1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166096.	Revised	S2-166096
6.10.6	S2-166096	P-CR	Updates to solution 6.6.1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165591. Revised to S2-166250.	Revised	S2-166250
6.10.6	S2-166250	P-CR	Updates to solution 6.6.1	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166096. Agreed in parallel session Block approved	Approved	
6.10	S2-165611	P-CR	Update of enable	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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.6			efficient user plane paths											
6.10.6	S2-165612	P-CR	Update of Multiple Tunnel based traffic offload	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165625	P-CR	Update on solution 6.6.1	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165658	P-CR	Clarification on the UL UP function for traffic branching	China Mobile	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165715	P-CR	UE triggered SSC mode update (update to solution 6.6.1)	Interdigital	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165743	P-CR	Updates to Session Continuity Section	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165777	P-CR	SSC mode update call flows	CATT	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165599	P-CR	Evaluation of Solution 4.14, 5.2 and 5.4	KDDI, Sprint	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165805	P-CR	Update to Solution 5.2	Samsung	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165809	P-CR	Clarification on the SSC mode	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165854	P-CR	Update of solution 6.5.4.	NTT DOCOMO, ZTE, CATR	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.6	S2-165873	P-CR	solution 6.1 update for SSC mode 3	Orange	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.7	S2-165643	P-CR	Interim agreements for KI 7	Huawei, HiSilicon, Sprint, CATR	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165810, to S2-166140.	Revised	S2-166140
6.10.7	S2-166140	P-CR	Interim agreements for KI 7	Huawei, HiSilicon, Sprint, CATR, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-165643, merging S2-165810. Revised to S2-166255.	Revised	S2-166255
6.10.7	S2-166255	P-CR	Interim agreements for KI 7	Huawei, HiSilicon, Sprint, CATR, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-166140. Approved	Approved	
6.10.7	S2-165644	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revised to S2-166141.	Revised	S2-166141

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6.10.7	S2-166141	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165644. Revised to S2-166253.	Revised	S2-166253
6.10.7	S2-166253	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166141. Revised to S2-166256.	Revised	S2-166256
6.10.7	S2-166256	P-CR	Interface for interconnection	Huawei, HiSilicon, China mobile, CATR, Telecom Italia, Deutsche Telekom, AT&T	23.799	-	-	-	-		FS_NextGen	Revision of S2-166253. Approved	Approved	
6.10.7	S2-165775	P-CR	Interim agreements for control plane interconnection model	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, Deutsche Telekom, AT&T, Verizon, China Mobile, Oracle	23.799	-	-	-	-		FS_NextGen	Revised to S2-166143.	Revised	S2-166143
6.10.7	S2-166143	P-CR	Interim agreements for control plane interconnection model	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, Deutsche Telekom, AT&T, Verizon, China Mobile, Oracle	23.799	-	-	-	-		FS_NextGen	Revision of S2-165775. WITHDRAWN (not provided)	Withdrawn	
6.10.7	S2-165801	P-CR	Interim agreements for KI 7	Cisco Systems, Inc., Ericsson	23.799	-	-	-	-		FS_NextGen	Response contribution in S2-165902. Revised to S2-166144.	Revised	S2-166144
6.10.7	S2-166144	P-CR	Interim agreements for KI 7	Cisco Systems, Inc., Ericsson, NTT DoCoMo, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-165801. Revised to S2-166257.	Revised	S2-166257
6.10.7	S2-166257	P-CR	Interim agreements for KI 7	Cisco Systems, Inc., Ericsson, NTT DoCoMo, ZTE	23.799	-	-	-	-		FS_NextGen	Revision of S2-166144. Merged with S2-166258 into S2-166284	Merged	
6.10.7	S2-165772	P-CR	Updates on solution for Control plane interconnection	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile,	23.799	-	-	-	-		FS_NextGen	Revised to S2-166142.	Revised	S2-166142

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			model with a data layer	Oracle, TeliaSonera										
6.10.7	S2-166142	P-CR	Updates on solution for Control plane interconnection model with a data layer	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera, T-Mobile US, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165772. Revised to S2-166258.	Revised	S2-166258
6.10.7	S2-166258	P-CR	Updates on solution for Control plane interconnection model with a data layer	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera, T-Mobile US, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166142. Revised, merging parts of S2-166257 to S2-166284.	Revised	S2-166284
6.10.7	S2-166284	P-CR	Updates on solution for Control plane interconnection model with a data layer	Nokia, Alcatel-Lucent Shanghai Bell, Telecom Italia, AT&T, China Mobile, Oracle, TeliaSonera, T-Mobile US, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166258, merging parts of S2-166257. Not Handled. It was decided that this should be done by the Rapporteur when implementing the TR.	Not Handled	
6.10.7	S2-165810	P-CR	Clarification on the direct interaction	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Merged with S2-165643 in S2-166140	Merged	
6.10.7	S2-165902	DISCUSSION	Response to 'Interim agreements for KI 7' proposal in S2-165801	Nokia, Alcatel-Lucent Shanghai Bell	-	-	-	-	-		FS_NextGen	LATE REQ. LATE DOC: Rx 17/10, 00:50. Not Handled	Not Handled	
6.10.7	S2-166056	DISCUSSION	Reply to S2-165902	Cisco Systems, Inc., Ericsson, NTT DoCoMo, ZTE	-	-	-	-	-		FS_NextGen	Created at meeting. Not Handled	Not Handled	
6.10.8	S2-165711	P-CR	Interim Agreements on common AN-CN interface	Motorola Mobility, Lenovo, Broadcom	23.799	-	-	-	-		FS_NextGen	Revised to S2-166099.	Revised	S2-166099
6.10.8	S2-166099	P-CR	Interim Agreements on common AN-CN	Motorola Mobility, Lenovo, Broadcom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165711. Revised to	Revised	S2-166126

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			interface									S2-166126.		
6.10.8	S2-166126	P-CR	Interim Agreements on common AN-CN interface	Motorola Mobility, Lenovo, Broadcom, Qualcomm Incorporated, Intel, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166099. Revised to S2-166252.	Revised	S2-166252
6.10.8	S2-166252	P-CR	Interim Agreements on common AN-CN interface	Motorola Mobility, Lenovo, Broadcom, Qualcomm Incorporated, Intel, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166126. Approved	Approved	
6.10.8	S2-165592	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	The Interim agreement part was merged into S2-166126. Revised to S2-166128.	Revised	S2-166128
6.10.8	S2-166128	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165592. Revised to S2-166251.	Revised	S2-166251
6.10.8	S2-166251	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166128. Revised to S2-166282.	Revised	S2-166282
6.10.8	S2-166282	P-CR	Untrusted access to NGC: update to solution 8.6 and Interim agreement	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-166251. Approved	Approved	
6.10.8	S2-165681	P-CR	Working assumptions proposal for N3GPP	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Merged into S2-166126	Merged	
6.10.8	S2-165767	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access	Qualcomm Inc.	23.799	-	-	-	-		FS_NextGen	The Interim agreement part was merged into S2-166126. Revised, merging S2-165562, to S2-166129.	Revised	S2-166129
6.10.8	S2-166129	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-	Qualcomm Inc., LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165767, merging S2-165562. Revised to S2-166254.	Revised	S2-166254

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			3GPP access											
6.10.8	S2-166254	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access	Qualcomm Inc., LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166129. Revised to S2-166283.	Revised	S2-166283
6.10.8	S2-166283	P-CR	Way forward on support of non-3GPP access and update to solution 8.6 for support of untrusted non-3GPP access	Qualcomm Inc., LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-166254. Approved	Approved	
6.10.8	S2-165824	P-CR	Some Interim Agreements on KI#8	CATT, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166127.	Revised	S2-166127
6.10.8	S2-166127	P-CR	Some Interim Agreements on KI#8	CATT,CATR, LG Electronics	23.799	-	-	-	-		FS_NextGen	Revision of S2-165824. Agreed in parallel session Block approved	Approved	
6.10.8	S2-165827	P-CR	Interim agreements on the interface between UE and Next Generation Core	LG Electronics	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.8	S2-165895	DISCUSSION	Way forward on accomplishing a single AN-CN interface	Intel	-	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.8	S2-165562	P-CR	Update to Solution 8.6	Ericsson	23.799	-	-	-	-		FS_NextGen	Merged with S2-165767 into S2-166129	Merged	
6.10.8	S2-165650	P-CR	Solution: Standalone non-3GPP access via NG2/NG3	Motorola Mobility, Lenovo, Broadcom, CMCC	23.799	-	-	-	-		FS_NextGen	Revised to S2-166130.	Revised	S2-166130
6.10.8	S2-166130	P-CR	Solution: Standalone non-3GPP access via NG2/NG3	Motorola Mobility, Lenovo, Broadcom, CMCC, Rogers	23.799	-	-	-	-		FS_NextGen	Revision of S2-165650. Approved	Approved	
6.10.8	S2-165680	P-CR	Solution of carrying NAS directly as IKEv2	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	

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			parameter for untrusted WLAN access											
6.10.8	S2-165735	P-CR	Update of Solution 8.3	ETRI	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.8	S2-165880	P-CR	Update to Solution 8.2	Intel	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.8	S2-165787	P-CR	Evaluation on Solution 8.5: Alternative C for the interface between UE and Next Generation Core	LG Electronics	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.10	S2-165536	P-CR	Interim agreements on the Policy Framework	Ericsson, ZTE, Oracle	23.799	-	-	-	-		FS_NextGen	Revised to S2-166133.	Revised	S2-166133
6.10.10	S2-166133	P-CR	Interim agreements on the Policy Framework	Ericsson, ZTE, Oracle	23.799	-	-	-	-		FS_NextGen	Revision of S2-165536. This was left for e-mail approval. e-mail approved	Approved	
6.10.10	S2-165534	P-CR	Updates in Policy Reference Architecture to reflect roaming aspects	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166134.	Revised	S2-166134
6.10.10	S2-166134	P-CR	Updates in Policy Reference Architecture to reflect roaming aspects	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165534. WITHDRAWN (not provided)	Withdrawn	
6.10.10	S2-165535	P-CR	Discussion on the need to send policies to the UE	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.10	S2-165537	P-CR	On the need on an interface between Policy and SDM	Ericsson	23.799	-	-	-	-		FS_NextGen	Revised to S2-166135.	Revised	S2-166135
6.10.10	S2-166135	P-CR	On the need on an interface between Policy and SDM	Ericsson	23.799	-	-	-	-		FS_NextGen	Revision of S2-165537. Postponed	Postponed	
6.10.10	S2-165647	P-CR	TSSF and Policy	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Agreed in parallel session Block approved	Approved	
6.10	S2-165740	P-CR	solution for	China Telecom,	23.799	-	-	-	-		FS_NextGen	Revised to	Revised	S2-166136

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.10			enhanced encrypted traffic detection	Alibaba								S2-166136.		
6.10 .10	S2-166136	P-CR	solution for enhanced encrypted traffic detection	China Telecom, Alibaba	23.799	-	-	-	-		FS_NextGen	Revision of S2-165740. Approved	Approved	
6.10 .10	S2-165878	P-CR	Policy on RAT/Frequency Selection Priority	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Revised to S2-166137.	Revised	S2-166137
6.10 .10	S2-166137	P-CR	Policy on RAT/Frequency Selection Priority	Huawei, HiSilicon, NICT, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165878. Revised to S2-166259.	Revised	S2-166259
6.10 .10	S2-166259	P-CR	Policy on RAT/Frequency Selection Priority	Huawei, HiSilicon, NICT, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166137. This was left for e-mail approval. e-mail approved	Approved	
6.10 .10	S2-165771	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revised to S2-166138.	Revised	S2-166138
6.10 .10	S2-166138	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	Revision of S2-165771. Approved	Approved	
6.10 .10	S2-165569	P-CR	Discussions and proposals on the considerations of Policy Control Framework for Network Slicing support	ZTE Corporation, Oracle, Telecom Italia, ETRI	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 11/10, 19:40. Revised to S2-166139.	Revised	S2-166139
6.10 .10	S2-166139	P-CR	Discussions and proposals on the considerations of Policy Control Framework for Network Slicing support	ZTE, Oracle, Telecom Italia, ETRI, KDDI, NEC, Sandvine	23.799	-	-	-	-		FS_NextGen	Revision of S2-165569. Approved	Approved	
6.10 .10	S2-165712	DISCUSSION	Discussion Paper on NextGen Support of Dynamic Policy Control	U.S. Department of Commerce	-	-	-	-	-	Rel-14	FS_NextGen	Noted in parallel session	Noted	
6.10 .17	S2-165542	DISCUSSION	A new solution for key issue 17 (introductory	NICT, ATR	-	-	-	-	-	Rel-14	FS_NextGen	Not Handled	Not Handled	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			slides)											
6.10.17	S2-165543	DISCUSSION	A new solution for key issue 17 (proposed text)	NICT, ATR	-	-	-	-	-	Rel-14	FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165685	P-CR	Network Discovery and Selection for 3GPP access technologies	Huawei, HiSilicon	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165768	P-CR	Update and evaluation of solution 6.17.1 for Key Issue 17 on Network Discovery and Selection in idle mode	Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165769	P-CR	Proposed way forward for Key Issue 17 on Network Discovery and Selection	Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165870	P-CR	Solution to KI 17: PLMN+RAT discovery and selection	Nokia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.17	S2-165871	P-CR	Interim agreements on KI 17: Network discovery and selection	Nokia	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.18	S2-165486	DISCUSSION	Considerations on voice support in NGS	MediaTek Inc.	-	-	-	-	-	Rel-14		Noted in parallel session	Noted	
6.10.18	S2-165868	P-CR	Updates on interworking and migration solution 18.2: Overall	Nokia, Qualcomm Incorporated, KDDI	23.799	-	-	-	-		FS_NextGen	Revised to S2-166100.	Revised	S2-166100
6.10.18	S2-166100	P-CR	Updates on interworking and migration solution 18.2: Overall	Nokia, Qualcomm Incorporated, KDDI, Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165868. Approved	Approved	
6.10.18	S2-165869	P-CR	Updates on interworking and migration solution 18.2: Call flows	Nokia, KDDI, Qualcomm Incorporated	23.799	-	-	-	-		FS_NextGen	Revised to S2-166101.	Revised	S2-166101
6.10.18	S2-166101	P-CR	Updates on interworking and migration solution 18.2: Call flows	Nokia, KDDI, Qualcomm Incorporated, Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165869. Approved	Approved	
6.10	S2-165657	P-CR	Solution for single	Huawei	23.799	-	-	-	-		FS_NextGen	Revised to	Merged	S2-166102

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.18			radio based lightweight interworking and migration									S2-166102. Merged S2-165657 into S2-166100 and S2-166102		
6.10.18	S2-166102	P-CR	Solution for single radio based lightweight interworking and migration	Huawei	23.799	-	-	-	-		FS_NextGen	Revision of S2-165657. It was decided to merge S2-165657 into S2-166100 and S2-166102 and S2-166102 was withdrawn.	Withdrawn	
6.10.18	S2-165583	P-CR	Update to solution 18.4	China Telecom	23.799	-	-	-	-		FS_NextGen	Agreed in parallel session Block approved	Approved	
6.10.18	S2-165867	P-CR	Update to Solution 18.4	Intel	23.799	-	-	-	-		FS_NextGen	Revised, merging S2-165874, to S2-166103.	Revised	S2-166103
6.10.18	S2-166103	P-CR	Update to Solution 18.4	Intel, Samsung	23.799	-	-	-	-		FS_NextGen	Revision of S2-165867, merging S2-165874. Revised to S2-166261.	Revised	S2-166261
6.10.18	S2-166261	P-CR	Update to Solution 18.4	Intel, Samsung	23.799	-	-	-	-		FS_NextGen	Revision of S2-166103. This was left for e-mail approval. e-mail revision 2 approved. Revised to S2-166292.	Revised	S2-166292
6.10.18	S2-166292	P-CR	Update to Solution 18.4	Intel, Samsung	23.799	-	-	-	-		FS_NextGen	e-mail revision 2 of S2-166261. Approved	Approved	
6.10.18	S2-165874	P-CR	An NGC/EPC Interworking Solution	Samsung, KT, Telecom Italia, SKT	23.799	-	-	-	-		FS_NextGen	Merged with S2-165867 into S2-	Merged	

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												166103		
6.10.18	S2-165593	P-CR	Migration solution with Evolved E-UTRAN to operate EPC and NextGen Core simultaneously	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Revision of S2-164423 from S2#116BIS (Not Handled). Revised to S2-166105.	Revised	S2-166105
6.10.18	S2-166105	P-CR	Migration solution with Evolved E-UTRAN to operate EPC and NextGen Core simultaneously	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165593. Revised to S2-166262.	Revised	S2-166262
6.10.18	S2-166262	P-CR	Migration solution with Evolved E-UTRAN to operate EPC and NextGen Core simultaneously	LG Electronics, SK Telecom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166105. Approved	Approved	
6.10.18	S2-165667	P-CR	Way forward on EPC-NG Core Interworking	Qualcomm Incorporated, Huawei, Nokia	23.799	-	-	-	-		FS_NextGen	Revised to S2-166104.	Revised	S2-166104
6.10.18	S2-166104	P-CR	Way forward on EPC-NG Core Interworking	Qualcomm Incorporated, Huawei, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-165667. Revised to S2-166263.	Revised	S2-166263
6.10.18	S2-166263	P-CR	Way forward on EPC-NG Core Interworking	Qualcomm Incorporated, Huawei, Nokia	23.799	-	-	-	-		FS_NextGen	Revision of S2-166104. This was left for e-mail approval. e-mail approved	Approved	
6.10.18	S2-165668	P-CR	Way forward on migration from option 3 to NG Core	Qualcomm Incorporated, Ericsson, NTT Docomo, AT&T, MediaTek, KDDI, Rogers Communications Canada, Nokia, KT, Vodafone, Apple	23.799	-	-	-	-		FS_NextGen	Revised to S2-166106.	Revised	S2-166106
6.10.18	S2-166106	P-CR	Way forward on migration from option 3 to NG Core	Qualcomm Incorporated, Ericsson, NTT Docomo, AT&T, MediaTek, KDDI,	23.799	-	-	-	-		FS_NextGen	Revision of S2-165668. Approved	Approved	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
				Rogers Communications Canada, Nokia, KT, Vodafone, Apple										
6.10.18	S2-165840	P-CR	Interim Agreements on Key Issue #18	China Telecom	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 14/10, 08:45. Not Handled	Not Handled	
6.10.18	S2-165672	LS OUT	[DRAFT] LS on migration from Option 3 to NextGen Core	Qualcomm Incorporated	-	-	-	-	-	Rel-14		Revised to S2-166107.	Revised	S2-166107
6.10.18	S2-166107	LS OUT	[DRAFT] LS on migration from Option 3 to NextGen Core	Qualcomm Incorporated	-	-	-	-	-	Rel-14		Revision of S2-165672. This was left for e-mail approval. e-mail revision 3 approved. Revised to S2-166288.	Revised	S2-166288
6.10.18	S2-166288	LS OUT	LS on migration from Option 3 to NextGen Core	SA WG2	-	-	-	-	-	Rel-14		e-mail revision 3 of S2-166107. Approved	Approved	
6.10.18	S2-165565	P-CR	Input to multiple Key Issues: NextGen core support for IMS	Ericsson, AT&T?	23.799	-	-	-	-		FS_NextGen	Confirm sources		
6.10.18	S2-165848	P-CR	Multimedia calls fallback from NextGen system to EPS	NTT DOCOMO	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.19	S2-165884	P-CR	Key Issue #19: EPC/NGCN updates for 'virtualisation'	Vodafone	23.799	-	-	-	-		FS_NextGen	Revised to S2-166132.	Revised	S2-166132
6.10.19	S2-166132	P-CR	Key Issue #19: EPC/NGCN updates for 'virtualisation'	Vodafone	23.799	-	-	-	-		FS_NextGen	Revision of S2-165884. Revised to S2-166264.	Revised	S2-166264
6.10.19	S2-166264	P-CR	Key Issue #19: EPC/NGCN updates for 'virtualisation'	Vodafone, Deutsche Telekom AG	23.799	-	-	-	-		FS_NextGen	Revision of S2-166132. This was left for e-mail approval. e-mail approved	Approved	
6.10	S2-165651	P-CR	Consolidate	China Mobile, AT&T,	23.799	-	-	-	-		FS_NextGen	Revised to	Revised	S2-166017

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
.22			overall architecture based on existing architecture options	Telecom Italia, Sprint, ZTE, CATR								S2-166017, merging S2-165778.		
6.10 .22	S2-166017	P-CR	Agreement on the overall architecture	Editor (China Mobile)	23.799	-	-	-	-		FS_NextGen	Revision of S2-165651, merging S2-165778. Revised to S2-166171.	Revised	S2-166171
6.10 .22	S2-166171	P-CR	Agreement on the overall architecture	China Mobile, AT&T, Telecom Italia, Sprint, ZTE, CATR, Broadcom, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166017. Revised, merging part of S2-166018, to S2-166265.	Revised	S2-166265
6.10 .22	S2-166265	P-CR	Agreement on the overall architecture	China Mobile, AT&T, Telecom Italia, Sprint, ZTE, CATR, Broadcom, Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-166171, merging part of S2-166018. Approved	Approved	
6.10 .22	S2-165694	P-CR	Interim Agreements on Consolidated Architecture Options	Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revised to S2-166018.	Revised	S2-166018
6.10 .22	S2-166018	P-CR	Interim Agreements on Consolidated Architecture Options	Deutsche Telekom	23.799	-	-	-	-		FS_NextGen	Revision of S2-165694. Principles merged with S2-166171 into S2-166265	Merged	
6.10 .22	S2-165778	P-CR	Interim agreements on Overall architecture aspects	Nokia	23.799	-	-	-	-		FS_NextGen	Merged with S2-165651 into S2-166017.	Merged	
6.10 .22	S2-165770	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell, Verizon, Cisco, Samsung, Intel, LGE	23.799	-	-	-	-		FS_NextGen	Revised to S2-166149.	Revised	S2-166149
6.10 .22	S2-166149	P-CR	Updates to Overall architecture option #6	Nokia, Alcatel-Lucent Shanghai Bell, Verizon, Cisco, Samsung, Intel,	23.799	-	-	-	-		FS_NextGen	Revision of S2-165770. Approved	Approved	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
				LGE, British Telecom.										
6.10.22	S2-165564	P-CR	Next Generation Network Architecture: Soln 6	Ericsson	23.799	-	-	-	-		FS_NextGen	Noted in parallel session	Noted	
6.10.22	S2-165692	P-CR	Update of Consolidated Architecture Option 4	Deutsche Telekom AG	23.799	-	-	-	-		FS_NextGen	Agreed in parallel session Block approved	Approved	
6.10.22	S2-165881	P-CR	Update to consolidate architecture option 6	BT	23.799	-	-	-	-		FS_NextGen	Merged with S2-165682 into S2-166108	Merged	
6.10.22	S2-165645	P-CR	Solution: Consolidated architecture option X	Huawei, Hisilicon, CATR	23.799	-	-	-	-		FS_NextGen	Revised to S2-166170.	Revised	S2-166170
6.10.22	S2-166170	P-CR	Solution: Consolidated architecture option X	Huawei, Hisilicon, CATR	23.799	-	-	-	-		FS_NextGen	Revision of S2-165645. Approved	Approved	
6.10.22	S2-165563	P-CR	Next Generation Network Architecture: Soln 3	Ericsson	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.22	S2-165807	P-CR	Architecture for concurrent access to same Data Network	ZTE Corporation	23.799	-	-	-	-		FS_NextGen	Not Handled	Not Handled	
6.10.22	S2-166050	DISCUSSION	Service-based architecture: What does it mean for NextGen ?	Huawei	-	-	-	-	-		FS_NextGen	Created in drafting session. Not Handled	Not Handled	
6.13	S2-165490	LS In	LS from RAN WG1: LS on RAN WG1 agreements for LTE-based V2X	RAN WG1	-	-	-	-	-	Rel-14	LTE_V2X-Core	Noted in parallel session	Noted	
6.13	S2-165906	LS In	LS from RAN WG2: Response LS on Multiple TMGIs for support of small and variable MBMS areas.	RAN WG2	-	-	-	-	-	Rel-14	LTE_V2X-Core	LATE DOC: Rx 16/10, 11:30. Noted in parallel session	Noted	
6.13	S2-165584	CR	23.285 CR0002 (Rel-14, 'B'):	Huawei, HiSilicon	23.285	0002	-	B	14.0.0	Rel-14	V2XARC	Noted in parallel	Noted	

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			Introducing reliability parameter on PC5 QoS handling									session		
6.13	S2-165631	CR	23.285 CR0004 (Rel-14, 'B'): Mapping between PPPP and latency for autonomous resources selection mode	Huawei, Hisilicon, LG Electronics, Ericsson	23.285	0004	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166029.	Revised	S2-166029
6.13	S2-166029	CR	23.285 CR0004R1 (Rel-14, 'B'): Mapping between PPPP and latency for autonomous resources selection mode	Huawei, Hisilicon, LG Electronics, Ericsson	23.285	0004	1	B	14.0.0	Rel-14	V2XARC	Revision of S2-165631. Agreed in parallel session Block approved	Agreed	
6.13	S2-165508	DISCUSSION	V2x message transport mechanism over LTE-Uu reference point	Ericsson	-	-	-	-	-	Rel-14	V2XARC	Noted in parallel session	Noted	
6.13	S2-165509	CR	23.285 CR0001 (Rel-14, 'F'): V2X message handling over LTE Uu	Ericsson	23.285	0001	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166030.	Revised	S2-166030
6.13	S2-166030	CR	23.285 CR0001R1 (Rel-14, 'F'): V2X message handling over LTE Uu	Ericsson	23.285	0001	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165509. Revised in parallel session to S2-166038.	Revised	S2-166038
6.13	S2-166038	CR	23.285 CR0001R2 (Rel-14, 'F'): V2X message handling over LTE Uu	Ericsson	23.285	0001	2	F	14.0.0	Rel-14	V2XARC	Revision of S2-166030. Agreed in parallel session Block approved	Agreed	
6.13	S2-165716	DISCUSSION	USD definitions for V2X communication	Qualcomm Incorporated, xxx	-	-	-	-	-			Source needs correction. Noted in parallel session	Noted	
6.13	S2-165717	CR	23.285 CR0012 (Rel-14, 'F'): Definition of the	Qualcomm Incorporated,	23.285	0012	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to	Revised	S2-166031

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			USD for Uu based V2X communication and V2X Application Server discovery									S2-166031.		
6.13	S2-166031	CR	23.285 CR0012R1 (Rel-14, 'F'): Definition of the USD for Uu based V2X communication and V2X Application Server discovery	Qualcomm Incorporated	23.285	0012	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165717. Agreed in parallel session Block approved	Agreed	
6.13	S2-165789	DISCUSSION	V2X USD with E-CGI	Nokia	-	-	-	-	-	Rel-14	V2XARC	Noted in parallel session	Noted	
6.13	S2-165630	CR	23.285 CR0003 (Rel-14, 'B'): Update of V2X impacts to EPC procedures	Huawei, Hisilicon, LG Electronics	23.285	0003	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166032.	Revised	S2-166032
6.13	S2-166032	CR	23.285 CR0003R1 (Rel-14, 'B'): Update of V2X impacts to EPC procedures	Huawei, Hisilicon, LG Electronics, Ericsson	23.285	0003	1	B	14.0.0	Rel-14	V2XARC	Revision of S2-165630. Agreed in parallel session Block approved	Agreed	
6.13	S2-165636	CR	23.285 CR0006 (Rel-14, 'B'): Subscription to V2X services	LG Electronics	23.285	0006	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166033.	Revised	S2-166033
6.13	S2-166033	CR	23.285 CR0006R1 (Rel-14, 'B'): Subscription to V2X services	LG Electronics	23.285	0006	1	B	14.0.0	Rel-14	V2XARC	Revision of S2-165636. Agreed in parallel session Block approved	Agreed	
6.13	S2-165679	CR	23.285 CR0009 (Rel-14, 'B'): Uplink distribution deployment option	KPN, LG Electronics	23.285	0009	-	B	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166034.	Revised	S2-166034
6.13	S2-166034	CR	23.285 CR0009R1 (Rel-14, 'F'): Uplink distribution deployment option	KPN, LG Electronics	23.285	0009	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165679. Agreed in parallel	Agreed	

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												session Block approved		
6.13	S2-165632	CR	23.285 CR0005 (Rel-14, 'F'): Update of Functional entities description	Huawei, Hisilicon	23.285	0005	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166035.	Revised	S2-166035
6.13	S2-166035	CR	23.285 CR0005R1 (Rel-14, 'F'): Update of Functional entities description	Huawei, Hisilicon	23.285	0005	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165632. Revised in parallel session to S2-166039.	Revised	S2-166039
6.13	S2-166039	CR	23.285 CR0005R2 (Rel-14, 'F'): Update of Functional entities description	Huawei, Hisilicon	23.285	0005	2	F	14.0.0	Rel-14	V2XARC	Revision of S2-166035. Agreed in parallel session Block approved	Agreed	
6.13	S2-165638	CR	23.285 CR0008 (Rel-14, 'F'): PC5-U stack instance for V2X use	LG Electronics	23.285	0008	-	F	14.0.0	Rel-14	V2XARC	Noted in parallel session	Noted	
6.13	S2-165713	CR	23.285 CR0010 (Rel-14, 'F'): Clarification on location mapping at V2X Application Server	Qualcomm Incorporated, Ericsson,	23.285	0010	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166036.	Revised	S2-166036
6.13	S2-166036	CR	23.285 CR0010R1 (Rel-14, 'F'): Clarification on location mapping at V2X Application Server	Qualcomm Incorporated, Ericsson,	23.285	0010	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165713. Agreed in parallel session Block approved	Agreed	
6.13	S2-165714	CR	23.285 CR0011 (Rel-14, 'F'): Clarification on V2X message reception using MBMS Receive Only Mode	Qualcomm Incorporated,	23.285	0011	-	F	14.0.0	Rel-14	V2XARC	Revised in parallel session to S2-166037.	Revised	S2-166037
6.13	S2-166037	CR	23.285 CR0011R1 (Rel-14, 'F'): Clarification on V2X message	Qualcomm Incorporated	23.285	0011	1	F	14.0.0	Rel-14	V2XARC	Revision of S2-165714. Noted in parallel	Noted	

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			reception using MBMS Receive Only Mode									session		
6.13	S2-165637	CR	23.285 CR0007 (Rel-14, 'F'): Clarification on MBMS for LTE-Uu based V2X architecture reference model	LG Electronics	23.285	0007	-	F	14.0.0	Rel-14	V2XARC	Agreed in parallel session Block approved	Agreed	
6.14	S2-165600	P-CR	New architecture requirement	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165601	P-CR	Key issue #4 update	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165917.	Revised	S2-165917
6.14	S2-165917	P-CR	Key issue #4 update	Intel, Huawei	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165601. Agreed in parallel session Block approved	Approved	
6.14	S2-165639	P-CR	New key issue - informing OTT about the UE's status	Alibaba	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165514	P-CR	New Solution 1.5 for Key issue 1	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165918.	Revised	S2-165918
6.14	S2-165918	P-CR	New Solution 1.5 for Key issue 1	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165514. Agreed in parallel session Block approved	Approved	
6.14	S2-165516	P-CR	Update to Solution 1.4	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165919.	Revised	S2-165919
6.14	S2-165919	P-CR	Update to Solution 1.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165516. Noted in parallel session	Noted	
6.14	S2-165813	P-CR	New solution	Nokia, Alcatel-	23.702	-	-	-	-		FS_PS_DATA_OFF	Merged in	Merged	

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			based on PCO for Key Issue#1	Lucent Shanghai Bell								parallel sessions with S2-165581 into S2-165922		
6.14	S2-165920	P-CR	New solution based on PCO for Key Issue#1	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	WITHDRAWN	Withdrawn	
6.14	S2-165921	LS OUT	[DRAFT] LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Created in parallel session. Revised in parallel session to S2-165926.	Revised	S2-165926
6.14	S2-165926	LS OUT	[DRAFT] LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Revision of S2-165921. Revised in parallel session to S2-165933.	Revised	S2-165933
6.14	S2-165933	LS OUT	LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Revision of S2-165926. Agreed in parallel session. Revised to S2-166118.	Revised	S2-166118
6.14	S2-166118	LS OUT	LS on PS Data Off	SA WG2	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Revision of S2-165933. e-mail approved and sent to CT WG1	Approved	
6.14	S2-166131	LS In	LS from CT WG1: Reply LS on PS Data Off	CT WG1	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF	Reply from CT WG1 in response to S2-166118. Noted in parallel session	Noted	
6.14	S2-165581	P-CR	New solution for key issue #1	Huawei, HiSilicon, Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165922.	Revised	S2-165922
6.14	S2-165922	P-CR	New solution for key issue #1	Huawei, HiSilicon, Intel, Nokia, Alcatel-Lucent Shanghai Bell, Orange,	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165581, merging S2-165813.	Revised	S2-165958

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
				Deutsche Telekom, Alibaba								Revised in parallel session to S2-165958.		
6.14	S2-165958	P-CR	New solution for key issue #1	Huawei, HiSilicon, Intel, Nokia, Alcatel-Lucent Shanghai Bell, Orange, Deutsche Telekom, Alibaba	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165922. Agreed in parallel session Block approved	Approved	
6.14	S2-165574	P-CR	Solution for Key issue 1 - Using USSD/USSI and ADD	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165924.	Revised	S2-165924
6.14	S2-165924	P-CR	Solution for Key issue 1 - Using USSD/USSI and ADD	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165574. Revised in parallel session to S2-165959.	Revised	S2-165959
6.14	S2-165959	P-CR	Solution for Key issue 1 - Using USSD/USSI and ADD	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165924. Agreed in parallel session Block approved	Approved	
6.14	S2-165515	P-CR	New Solution 2.5 for Key issue 2	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165925.	Revised	S2-165925
6.14	S2-165925	P-CR	New Solution 2.5 for Key issue 2	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165515. Agreed in parallel session Block approved	Approved	
6.14	S2-165517	P-CR	Update to Solution 2.3	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Agreed in parallel session Block approved	Approved	
6.14	S2-165552	P-CR	New extendable solutions with no UE modem and no VPLMN impact for early deployment	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165927.	Revised	S2-165927

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
6.14	S2-165927	P-CR	New extendable solutions for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165552. Revised in parallel session to S2-165960.	Revised	S2-165960
6.14	S2-165960	P-CR	New extendable solutions with no UE modem and no VPLMN impact for early deployment	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165927. Revised in parallel session to S2-166161.	Revised	S2-166161
6.14	S2-166161	P-CR	New extendable solutions with no UE modem and no VPLMN impact for early deployment	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165960. Agreed in parallel session Block approved	Approved	
6.14	S2-165576	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165928.	Revised	S2-165928
6.14	S2-165928	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165576. Revised in parallel session to S2-165961.	Revised	S2-165961
6.14	S2-165961	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165928. Revised in parallel session to S2-165965.	Revised	S2-165965
6.14	S2-165965	P-CR	Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165961. Agreed in parallel session Block approved	Approved	
6.14	S2-165602	P-CR	Update and evaluation for solution #2.2	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165929.	Revised	S2-165929
6.14	S2-165929	P-CR	Update and	Intel, Huawei	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of	Approved	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			evaluation for solution #2.2									S2-165602. Agreed in parallel session Block approved		
6.14	S2-165518	P-CR	Update to Solution 3.4	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165930.	Revised	S2-165930
6.14	S2-165930	P-CR	Update to Solution 3.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165518. Revised in parallel session to S2-165962.	Revised	S2-165962
6.14	S2-165962	P-CR	Update to Solution 3.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165930. Agreed in parallel session Block approved	Approved	
6.14	S2-165815	P-CR	New KI#3 solution: Solution using HSS knowledge of PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165931.	Revised	S2-165931
6.14	S2-165931	P-CR	New KI#3 solution: Solution using HSS knowledge of PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165815. Agreed in parallel session Block approved	Approved	
6.14	S2-165816	P-CR	New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165932.	Revised	S2-165932
6.14	S2-165932	P-CR	New KI#3 solution using PCO for carrying PS Data	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165816. Revised in	Revised	S2-165963

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			Off UE status avoiding VPLMN impacts for early deployments									parallel session to S2-165963.		
6.14	S2-165963	P-CR	New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165932. Revised in parallel session to S2-166162.	Revised	S2-166162
6.14	S2-166162	P-CR	New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165963. Agreed in parallel session Block approved	Approved	
6.14	S2-165582	P-CR	Update on solution 3.3	Huawei, HiSilicon	23.702	-	-	-	-		FS_PS_DATA_OFF	Agreed in parallel session Block approved	Approved	
6.14	S2-165603	P-CR	Update and evaluation for solution #3.2	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165948.	Revised	S2-165948
6.14	S2-165948	P-CR	Update and evaluation for solution #3.2	Intel, Huawei	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165603. Agreed in parallel session Block approved	Approved	
6.14	S2-165577	P-CR	Key issue 4 solution 4.2 - correction of implementation errors	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Agreed in parallel session Block approved	Approved	
6.14	S2-165519	P-CR	Update to Solution 4.4	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165949.	Revised	S2-165949
6.14	S2-165949	P-CR	Update to Solution 4.4	Ericsson	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165519. Agreed in parallel session Block	Approved	

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												approved		
6.14	S2-165578	P-CR	Solution for Key Issue 4 - Control of other SIP based services and non SIP based services	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Revised in parallel session to S2-165950.	Revised	S2-165950
6.14	S2-165950	P-CR	Solution for Key Issue 4 - Control of other SIP based services and non SIP based services	BlackBerry UK Ltd	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165578. WITHDRAWN (not provided)	Withdrawn	
6.14	S2-165604	P-CR	Update on solutions for key issue #4	Intel, Huawei	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165605	P-CR	New solution for key issue #4	Intel, Huawei, China Unicom	23.702	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165820	P-CR	Update to solution 4.4	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165821	P-CR	Update to solution 4.5	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165500	DISCUSSION	Comparison and evaluation of Data Off solutions	Nokia	-	-	-	-	-		FS_PS_DATA_OFF	Noted in parallel session	Noted	
6.14	S2-165501	P-CR	Data Off evaluation and way forward	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-		FS_PS_DATA_OFF	LATE DOC: Rx: 11/10, 17:15. Revised in parallel session to S2-165951.	Revised	S2-165951
6.14	S2-165951	P-CR	Data Off evaluation and way forward	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165501. Revised in parallel session to S2-165964.	Revised	S2-165964
6.14	S2-165964	P-CR	Data Off way forward	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165951. Revised in parallel session to S2-166164.	Revised	S2-166164
6.14	S2-166164	P-CR	Data Off evaluation and way forward	Nokia, Alcatel-Lucent Shanghai Bell	23.702	-	-	-	-	-	FS_PS_DATA_OFF	Revision of S2-165964. Agreed in parallel	Approved	

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												session Block approved		
6.14	S2-165669	P-CR	Evaluation of PS data off solutions	Qualcomm Incorporated	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165520	P-CR	Evaluation Criteria	Ericsson	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165575	P-CR	Key Issue 1 - conclusions	BlackBerry UK Ltd	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165607	P-CR	Overall evaluation for key issue #1	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165608	P-CR	Overall evaluation for key issue #2	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165609	P-CR	Overall evaluation for key issue #3	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165610	P-CR	Overall evaluation for key issue #4	Intel	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165606	P-CR	Conclusion for 3GPP PS Data Off	Intel, China Unicom	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165822	P-CR	Discussion on evaluation criteria for key issue 1	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165823	P-CR	Discussion on USSD-based solution for key issue 1	ZTE	23.702	-	-	-	-		FS_PS_DATA_OFF	Not Handled	Not Handled	
6.14	S2-165858	DISCUSSION	DP on Data Off LS to SA WG3	Deutsche Telekom AG	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF			
6.14	S2-165861	LS OUT	[DRAFT] LS on PS Data Off function	Deutsche Telekom AG	-	-	-	-	-	Rel-14	FS_PS_DATA_OFF			
6.15	S2-166001	Other	FS_CIoT_Ext: Indicative show of hands	Rapporteur (Intel)	-	-	-	-	-	-	FS_CIoT_Ext	Revised in parallel session to S2-166002.	Revised	S2-166002
6.15	S2-166002	Other	FS_CIoT_Ext: Indicative show of hands	Rapporteur (Intel)	-	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166001. Revised in parallel session to S2-166191.	Revised	S2-166191
6.15	S2-166191	Other	FS_CIoT_Ext: Indicative show of hands	Rapporteur (Intel)	-	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166002. Noted in parallel session	Noted	
6.15	S2-165702	DISCUSSION	Considerations on UE-SCEF reliable communications	Huawei, HiSilicon, Neul Limited	-	-	-	-	-			Noted in parallel session	Noted	
6.15	S2-165521	P-CR	Evaluation & Conclusion Key	Ericsson	23.730	-	-	-	-		FS_CIoT_Ext	Opened in parallel	Revised	S2-166270

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			issue #2									session. Revised to S2-166270.		
6.15	S2-166270	P-CR	Evaluation & Conclusion Key issue #2	Ericsson	23.730	-	-	-	-		FS_CIoT_Ext	Revision of S2-165521. This was left for e-mail approval. Noted	Noted	
6.15	S2-165708	P-CR	Concluding Key Issue 2	Convida Wireless	23.730	-	-	-	-		CIoT_Ext	Opened in parallel session. This was postponed to the next meeting.	Postponed	
6.15	S2-165721	P-CR	Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Qualcomm Incorporated	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-165972.	Revised	S2-165972
6.15	S2-165972	P-CR	Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Qualcomm Incorporated	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165721. Revised in parallel session to S2-166010.	Revised	S2-166010
6.15	S2-166010	P-CR	Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Qualcomm Incorporated	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165972. Agreed in parallel session Block approved	Approved	
6.15	S2-165973	LS OUT	[DRAFT] LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Revised in parallel session to S2-166011.	Revised	S2-166011
6.15	S2-166011	LS OUT	[DRAFT] LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT	SA WG2	-	-	-	-	-	-	-	Revision of S2-165973. This was left for e-mail approval. e-mail approved.	Revised	S2-166285

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
												Revised to remove 'draft' in S2-166285		
6.15	S2-166285	LS OUT	LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT	SA WG2	-	-	-	-	-	-	-	e-mail revision of S2-166011. Approved	Approved	
6.15	S2-165893	P-CR	Aspects of Handling of UE WB-E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	Vodafone	23.730	-	-	-	-		FS_CIoT_Ext	Merged with S2-165972 into S2-165974	Merged	
6.15	S2-165722	P-CR	Solution for Reuse of MBMS - Key issue #4	Qualcomm Incorporated	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session, merging S2-165893, to S2-165974.	Revised	S2-165974
6.15	S2-165974	P-CR	Solution for Reuse of MBMS - Key issue #4	Qualcomm Incorporated	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165722, merging S2-165893. Agreed in parallel session Block approved	Approved	
6.15	S2-165703	P-CR	Solution on coverage enhancement for multicast	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Noted in parallel session	Noted	
6.15	S2-165709	P-CR	Concluding Key Issue 4	Convida Wireless	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-165975.	Revised	S2-165975
6.15	S2-165975	P-CR	Concluding Key Issue 4	Convida Wireless	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165709. Agreed in parallel session Block approved	Approved	
6.15	S2-165728	P-CR	Addition of Impacts and Evaluations for	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to	Revised	S2-165976

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			Location Services Solutions									S2-165976.		
6.15	S2-165976	P-CR	Addition of Impacts and Evaluations for Location Services Solutions	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165728. Revised in parallel session to S2-166013.	Revised	S2-166013
6.15	S2-166013	P-CR	Addition of Impacts and Evaluations for Location Services Solutions	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165976. Revised in parallel session to S2-166200.	Revised	S2-166200
6.15	S2-166200	P-CR	Addition of Impacts and Evaluations for Location Services Solutions	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166013. Agreed in parallel session Block approved	Approved	
6.15	S2-165704	P-CR	Solution on coverage enhancement for location services	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-165977.	Revised	S2-165977
6.15	S2-165977	P-CR	Solution on coverage enhancement for location services	Huawei, HiSilicon	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165704. Agreed in parallel session Block approved	Approved	
6.15	S2-165864	P-CR	Evaluation & Conclusion Key issue #5	Ericsson LM	23.730	-	-	-	-		FS_CIoT_Ext	LATE DOC: WITHDRAWN (not provided)	Withdrawn	
6.15	S2-165705	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 1	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-165978.	Revised	S2-165978
6.15	S2-165978	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 1	Huawei, HiSilicon	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165705. Revised in parallel session to S2-166014.	Revised	S2-166014
6.15	S2-166014	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) -	Huawei, HiSilicon	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165978. Agreed in	Approved	

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			Option 1									parallel session Block approved		
6.15	S2-165706	P-CR	Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 2	Huawei, HiSilicon	23.730	-	-	-	-		CIoT_Ext	Noted in parallel session	Noted	
6.15	S2-165689	P-CR	Input to evaluation and conclusion on sol 15 for KI 6	Ericsson	23.730	-	-	-	-		FS_NextGen	Revised in parallel session to S2-165981.	Revised	S2-165981
6.15	S2-165981	P-CR	Input to evaluation and conclusion on sol 15 for KI 6	Ericsson	23.730	-	-	-	-	-	FS_NextGen	Revision of S2-165689. Revised in parallel session to S2-166015.	Revised	S2-166015
6.15	S2-166015	P-CR	Input to evaluation and conclusion on sol 15 for KI 6	Ericsson	23.730	-	-	-	-	-	FS_NextGen	Revision of S2-165981. Agreed in parallel session Block approved	Approved	
6.15	S2-165755	P-CR	Solution evaluation and conclusion for Key issue #6 - 'Inter UE QoS for NB-IoT Control Plane Optimisation'.	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Opened in parallel session. Noted in parallel session	Noted	
6.15	S2-165885	P-CR	Solution 15 as Conclusion on key Issue#6	Vodafone	23.730	-	-	-	-		CIoT_Ext	Revised in parallel session to S2-166016.	Revised	S2-166016
6.15	S2-166016	P-CR	Solution 15 as Conclusion on key Issue#6	Vodafone	23.730	-	-	-	-	-	CIoT_Ext	Revision of S2-165885. Agreed in parallel session Block approved	Approved	
6.15	S2-165905	LS In	LS from RAN WG2: Reply LS on overload control for CP CIoT EPS optimization	RAN WG2	-	-	-	-	-	Rel-14	FS_CIoT_Ext	LATE DOC: Rx 16/10, 11:30. Not Handled. Postponed to meeting	Postponed	

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												#118		
6.15	S2-166057	LS In	LS from RAN WG3: Reply LS on overload control for CP CIoT EPS optimization	RAN WG3	-	-	-	-	-	Rel-14	FS_CIoT_Ext	Response drafted in S2-165982 (withdrawn). Postponed to meeting #118	Postponed	
6.15	S2-165982	LS OUT	Reply LS to RAN WG2 and RAN WG3 on overload control for CP CIoT EPS optimization	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Response to S2-166057. WITHDRAWN	Withdrawn	
6.15	S2-165567	P-CR	CN Overload Control for Control Plane Only PDN Connection	Intel	23.730	-	-	-	-		FS_CIoT_Ext	Merged in parallel session with S2-166180 into S2-166201	Merged	
6.15	S2-165983	P-CR	CN Overload Control for Control Plane Only PDN Connection	Intel	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165567. WITHDRAWN	Withdrawn	
6.15	S2-165729	P-CR	Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to S2-165984.	Revised	S2-165984
6.15	S2-165984	P-CR	Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	Qualcomm Incorporated	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165729. Revised in parallel session to S2-166180.	Revised	S2-166180
6.15	S2-166180	P-CR	Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	Qualcomm Incorporated, Intel	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165984. Revised in parallel session, merging S2-165567, to S2-166201.	Revised	S2-166201
6.15	S2-166201	P-CR	Clarifications on UE/MME behaviour for CN Overload Control	Qualcomm Incorporated, Intel	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166180, merging S2-165567.	Approved	

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			for CP Optimization									Agreed in parallel session Block approved		
6.15	S2-165723	P-CR	Backward compatibility in CN Overload Control for CP Optimization	Qualcomm Incorporated	23.730	-	-	-	-		FS_CIoT_Ext	Agreed in parallel session Block approved	Approved	
6.15	S2-165860	P-CR	Control Plane back-off timer solutions	Nokia, Alcatel-Lucent Shanghai Bell	23.730	-	-	-	-		FS_CIoT_Ext	Noted in parallel session	Noted	
6.15	S2-165550	P-CR	CIoT_Correction to KI7 solution 9	NEC	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to S2-166012.	Revised	S2-166012
6.15	S2-166012	P-CR	CIoT_Correction to KI7 solution 9	NEC	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165550. Revised in parallel session to S2-166181.	Revised	S2-166181
6.15	S2-166181	P-CR	CIoT_Correction to KI7 solution 9	NEC	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-166012. Agreed in parallel session Block approved	Approved	
6.15	S2-165524	P-CR	Conclusion solution 9 - Overload Start	Ericsson	23.730	-	-	-	-		FS_CIoT_Ext	Revised in parallel session to S2-165985.	Revised	S2-165985
6.15	S2-165985	P-CR	Conclusion solution 9 - Overload Start	Ericsson	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165524. Revised in parallel session to S2-166199.	Revised	S2-166199
6.15	S2-166199	P-CR	Conclusion solution 9 - Overload Start	Ericsson	23.730	-	-	-	-	-	FS_CIoT_Ext	Revision of S2-165985. Agreed in parallel session Block approved	Approved	
6.15	S2-165907	LS In	LS from RAN WG2: Response	RAN WG2	-	-	-	-	-	Rel-14	FS_CIoT_Ext	LATE DOC: Rx 16/10,	Replied to	

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures									11:30. Response drafted in S2-165986. Final response in S2-166286		
6.15	S2-166148	LS In	LS from CT WG1: LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	CT WG1	-	-	-	-	-	Rel-14	CIOT-CT	LATE DOC: Rx 20/10, 11:20. Response drafted in S2-165986. Final response in S2-166286	Replied to	
6.15	S2-165986	LS OUT	[DRAFT] Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	SA WG2	-	-	-	-	-	-	-	Created in parallel session. Response to S2-165907 and S2-166148. This was left for e-mail approval. Revision 8 approved. Revised to S2-166286.	Revised	S2-166286
6.15	S2-166286	LS OUT	Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	SA WG2	-	-	-	-	-	-	-	Response to S2-165907 and S2-166148. e-mail revision 8 of S2-165986. Approved	Approved	
6.15	S2-165568	CR	23.401 CR3135 (Rel-14, 'B'): Authorization of use of Coverage Enhancement	Intel	23.401	3135	-	B	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session to S2-165987.	Revised	S2-165987
6.15	S2-165987	CR	23.401 CR3135R1 (Rel-14, 'B'): Authorization of use of Coverage Enhancement	Intel	23.401	3135	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165568. Postponed	Postponed	
6.15	S2-165741	CR	23.060 CR2015	Intel	23.060	2015	-	B	14.1.0	Rel-	CIoT_Ext	Wrong TS	Revised	S2-165988

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			(Rel-14, 'B'): Authorization of use of Coverage Enhancement							14		number on CR: Should be 23.060! Revised in parallel session to S2-165988.		
6.15	S2-165988	CR	23.060 CR2015R1 (Rel-14, 'B'): Authorization of use of Coverage Enhancement	Intel, Orange	23.060	2015	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165741. Postponed	Postponed	
6.15	S2-165571	CR	23.682 CR0235 (Rel-14, 'B'): Support of Enhanced Coverage Authorization Control via SCEF	Intel	23.682	0235	-	B	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session to S2-165989.	Revised	S2-165989
6.15	S2-165989	CR	23.682 CR0235R1 (Rel-14, 'B'): Support of Enhanced Coverage Authorization Control via SCEF	Intel	23.682	0235	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165571. Postponed	Postponed	
6.15	S2-165522	CR	23.401 CR3131 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c)	Ericsson	23.401	3131	-	C	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session to S2-165992.	Revised	S2-165992
6.15	S2-165992	CR	23.401 CR3131R1 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c)	Ericsson	23.401	3131	1	C	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165522. Postponed	Postponed	
6.15	S2-165523	CR	23.682 CR0234 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack (5c)	Ericsson	23.682	0234	-	C	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session to S2-165993.	Revised	S2-165993
6.15	S2-165993	CR	23.682 CR0234R1 (Rel-14, 'C'): Reliable UE delivery based on hop by hop ack	Ericsson	23.682	0234	1	C	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165523. Postponed	Postponed	

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			(5c)											
6.15	S2-165710	CR	23.682 CR0238 (Rel-14, 'B'): CIoT Data Delivery Service	Convida Wireless	23.682	0238	-	B	14.1.0	Rel-14	CIoT	Revised in parallel session to S2-165994.	Revised	S2-165994
6.15	S2-165994	CR	23.682 CR0238R1 (Rel-14, 'B'): CIoT Data Delivery Service	Convida Wireless	23.682	0238	1	B	14.1.0	Rel-14	CIoT	Revision of S2-165710. Postponed	Postponed	
6.15	S2-165891	CR	23.401 CR3092R1 (Rel-14, 'B'): Inter UE QoS for NB-IoT control plane CIoT EPS optimisation	Vodafone	23.401	3092	1	B	14.1.0	Rel-14	CIoT_Ext	CR needs to be re-written to version 14.1.0. Not Handled	-	
6.15	S2-165525	CR	23.401 CR3132 (Rel-14, 'C'): Overload Start message for control plane data only	Ericsson	23.401	3132	-	C	14.1.0	Rel-14	CIoT_Ext	Merged in parallel session with S2-165549 into S2-165991.	Merged	
6.15	S2-165549	CR	23.401 CR3134 (Rel-14, 'B'): CIoT_KI7_sol9 - Overload Start for control plane data	NEC	23.401	3134	-	B	14.1.0	Rel-14	CIoT_Ext	Revised in parallel session, merging S2-165549, to S2-165991.	Revised	S2-165991
6.15	S2-165991	CR	23.401 CR3134R1 (Rel-14, 'B'): CIoT_KI7_sol9 - Overload Start for control plane data	NEC	23.401	3134	1	B	14.1.0	Rel-14	CIoT_Ext	Revision of S2-165549, merging S2-165525. Noted in parallel session	Noted	
6.15	S2-165548	CR	23.401 CR3133 (Rel-14, 'B'): CIoT_KI7_sol8 - Control Plane data back-off timer	NEC	23.401	3133	-	B	14.1.0	Rel-14	CIoT_Ext	Merged in parallel session with S2-165744 into S2-165990.	Merged	
6.15	S2-165744	CR	23.401 CR3143 (Rel-14, 'B'): Control Plane data back-off timer introduction	Qualcomm Incorporated	23.401	3143	-	B	14.1.0	Rel-14	CIoT	Revised in parallel session, merging S2-165548, in S2-165990	Revised	S2-165990
6.15	S2-165990	CR	23.401 CR3143R1 (Rel-14, 'B'): Control Plane data	Qualcomm Incorporated, NEC, Intel, Samsung	23.401	3143	1	B	14.1.0	Rel-14	CIoT	Revision of S2-165744, merging S2-	Revised	S2-166198

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			back-off timer introduction									165548. Revised in parallel session to S2-166198.		
6.15	S2-166198	CR	23.401 CR3143R2 (Rel-14, 'B'): Control Plane data back-off timer introduction	Qualcomm Incorporated, NEC, Intel, Samsung	23.401	3143	2	B	14.1.0	Rel-14	CIoT	Revision of S2-165990. Agreed in parallel session Block approved	Agreed	
6.15	S2-165909	LS In	LS from RAN WG2: LS on mobility enhancements for eNB-IoT	RAN WG2	-	-	-	-	-	Rel-14	NB_IOTenh-Core	LATE DOC: Rx 16/10, 11:30. This was postponed to SA WG2 meeting #118.	Postponed	
6.15	S2-166115	LS In	LS from RAN WG1: LS on collisions between SC-PTM and Paging in NB-IoT	RAN WG1	-	-	-	-	-	Rel-14	NB_IOTenh	LATE DOC: Rx 18/10, 20:20. Not Handled. Postponed to meeting #118.	Postponed	
6.16	S2-165614	DISCUSSION	Discussion and evaluation on the solution of GENCEF	Huawei, HiSilicon	-	-	-	-	-	Rel-14	GENCEF	Not Handled	Not Handled	
6.16	S2-165613	CR	23.682 CR0236 (Rel-14, 'C'): Using individual SCEF reference ID during the group-based monitoring event configuration procedure	Huawei, HiSilicon	23.682	0236	-	C	14.1.0	Rel-14	GENCEF	Not Handled	-	
6.16	S2-165731	CR	23.682 CR0239 (Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs	ZTE	23.682	0239	-	C	14.1.0	Rel-14	GENCEF	Revised in parallel session to S2-165980.	Revised	S2-165980
6.16	S2-165980	CR	23.682 CR0239R1	ZTE	23.682	0239	1	C	14.1.0	Rel-	GENCEF	Revision of	Revised	S2-166182

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			(Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs							14		S2-165731. Revised in parallel session to S2-166182.		
6.16	S2-166182	CR	23.682 CR0239R2 (Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs	ZTE	23.682	0239	2	C	14.1.0	Rel-14	GENCEF	Revision of S2-165980. Revised in parallel session to S2-166192.	Revised	S2-166192
6.16	S2-166192	CR	23.682 CR0239R3 (Rel-14, 'C'): Enhancements to monitoring event configuration and reporting procedures for group of UEs	ZTE	23.682	0239	3	C	14.1.0	Rel-14	GENCEF	Revision of S2-166182. Agreed in parallel session Block approved	Agreed	
6.16	S2-165734	CR	23.682 CR0240 (Rel-14, 'B'): Group monitoring event configuration and reporting for UEs - Solution Option 1A	ZTE	23.682	0240	-	B	14.1.0	Rel-14	GENCEF	Not Handled	-	
6.16	S2-165899	CR	23.682 CR0227R3 (Rel-14, 'C'): Group based MONTE Event Configuration via HSS	Samsung	23.682	0227	3	C	14.1.0	Rel-14	GENCEF	Revision of S2-165237 (Technically endorsed at S2#116BIS). LATE DOC: Rx 17/10, 09:15. Revised in parallel session to S2-165979.	Revised	S2-165979
6.16	S2-165979	CR	23.682 CR0227R4 (Rel-14, 'C'): Group based MONTE Event Configuration via HSS	Samsung	23.682	0227	4	C	14.1.0	Rel-14	GENCEF	Revision of S2-165899. Revised in parallel session to S2-166183.	Revised	S2-166183
6.16	S2-166183	CR	23.682 CR0227R5	Samsung	23.682	0227	5	C	14.1.0	Rel-	GENCEF	Revision of	Revised	S2-166193

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			(Rel-14, 'C'): Group based MONTE Event Configuration via HSS							14		S2-165979. Revised in parallel session to S2-166193.		
6.16	S2-166193	CR	23.682 CR0227R6 (Rel-14, 'C'): Group based MONTE Event Configuration via HSS	Samsung	23.682	0227	6	C	14.1.0	Rel-14	GENCEF	Revision of S2-166183. Agreed in parallel session Block approved	Agreed	
6.18	S2-165892	P-CR	New Key Issue: Transition of a E-UTRAN site between full isolation and limited backhaul	Orange	23.799	-	-	-	-		FS_IOPS_LB	Revised in parallel session to S2-165955.	Revised	S2-165955
6.18	S2-165955	P-CR	New Key Issue: Transition of a E-UTRAN site between full isolation and limited backhaul	Orange	23.799	-	-	-	-	-	FS_IOPS_LB	Revision of S2-165892. Agreed in parallel session Block approved	Approved	
6.18	S2-165894	P-CR	New Key Issue: Admission of a Public Safety UE not known in the E-UTRAN site	Orange	23.798	-	-	-	-		FS_IOPS_LB	Revised in parallel session to S2-165956.	Revised	S2-165956
6.18	S2-165956	P-CR	Admission of a Public Safety UE not known in the E-UTRAN site	Orange	23.798	-	-	-	-	-	FS_IOPS_LB	Revision of S2-165894. Agreed in parallel session Block approved	Approved	
6.18	S2-165896	P-CR	Solution: IOPS network using the backhaul for authentication only	Orange	23.798	-	-	-	-		FS_IOPS_LB	Revised in parallel session to S2-165957.	Revised	S2-165957
6.18	S2-165957	P-CR	New solution: IOPS network using the backhaul for authentication only	Orange	23.798	-	-	-	-	-	FS_IOPS_LB	Revision of S2-165896. Agreed in parallel session Block approved	Approved	
6.21	S2-165502	P-CR	TR 23.751	Nokia, Alcatel-	23.751	-	-	-	-		FS_VoWLAN	Agreed in	Approved	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			skeleton	Lucent Shanghai Bell								parallel session Block approved		
6.21	S2-165503	P-CR	TR 23.751 scope	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Agreed in parallel session Block approved	Approved	
6.21	S2-165504	P-CR	New Key Issues on QoS differentiation in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Revised in parallel session to S2-165952.	Revised	S2-165952
6.21	S2-165952	P-CR	New Key Issues on QoS differentiation in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165504. Revised in parallel session to S2-166026.	Revised	S2-166026
6.21	S2-166026	P-CR	New Key Issues on QoS differentiation in the user plane	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165952. Approved	Approved	
6.21	S2-165505	P-CR	New Key Issue on determining QoS for the uplink traffic	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Revised in parallel session to S2-165953.	Revised	S2-165953
6.21	S2-165953	P-CR	New Key Issue on determining QoS for the uplink traffic	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165505. Revised in parallel session to S2-166027.	Revised	S2-166027
6.21	S2-166027	P-CR	New Key Issue on determining QoS for the uplink traffic	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165953. Approved	Approved	
6.21	S2-165506	P-CR	Solution for User Plane QoS differentiation in untrusted WLAN case	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-		FS_VoWLAN	Revised in parallel session to S2-165954.	Revised	S2-165954
6.21	S2-165954	P-CR	Solution for User Plane QoS differentiation in untrusted WLAN case	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-165506. Revised in parallel session to S2-166163.	Revised	S2-166163
6.21	S2-166163	P-CR	Solution for User	Nokia, Alcatel-	23.751	-	-	-	-	-	FS_VoWLAN	Revision of	Revised	S2-166028

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			Plane QoS differentiation in untrusted WLAN case	Lucent Shanghai Bell								S2-165954. Revised in parallel session to S2-166028.		
6.21	S2-166028	P-CR	Solution for User Plane QoS differentiation in untrusted WLAN case	Nokia, Alcatel-Lucent Shanghai Bell	23.751	-	-	-	-	-	FS_VoWLAN	Revision of S2-166163. Approved	Approved	
7.1	S2-165633	SID NEW	New SID on enhanced VoLTE performance	Huawei, HiSilicon, China Telecom, Qualcomm Incorporated, China Mobile, China Unicom, T-Mobile USA INC, Telekom Austria AG, Teliasonera, Intel, AT&T, Telecom Italia	-	-	-	-	-			Revised to S2-165912.	Revised	S2-165912
7.1	S2-165912	SID NEW	New SID on enhanced VoLTE performance	Huawei, HiSilicon, China Telecom, Qualcomm Incorporated, China Mobile, China Unicom, T-Mobile USA INC, Telekom Austria AG, Teliasonera, Intel, AT&T, Telecom Italia	-	-	-	-	-			Revision of S2-165633. Approved	Approved	
7.1	S2-165634	DISCUSSION	Discussion for codec dependent triggering of PS Handover	HUAWEI TECHNOLOGIES CO., LTD	-	-	-	-	-			Not Handled	Not Handled	
7.1	S2-165666	DISCUSSION	On RAN awareness of codec information	Qualcomm Incorporated	-	-	-	-	-	Rel-15		Not Handled	Not Handled	
7.1	S2-165673	SID NEW	Study on Unlicensed spectrum offloading system enhancements	Qualcomm Incorporated, Intel, KDDI	-	-	-	-	-	Rel-15		Revised to S2-165913.	Revised	S2-165913
7.1	S2-165913	SID NEW	Study on Unlicensed spectrum offloading system enhancements	Qualcomm Incorporated, Intel, KDDI, NEC, Convidia Wireless, ATT, Nokia	-	-	-	-	-	Rel-15		Revision of S2-165673. Revised to S2-166211.	Revised	S2-166211

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
7.1	S2-166211	SID NEW	Study on Unlicensed spectrum offloading system enhancements	Qualcomm Incorporated, Intel, KDDI, NEC, Convida Wireless, ATT, Nokia	-	-	-	-	-	Rel-15		Revision of S2-165913. Approved	Approved	
7.1	S2-165701	SID NEW	New SID on architecture enhancements to ProSe UE-to-Network Relay for Wearables	Huawei, HiSilicon, LG Electronics, Nokia, Convida Wireless, KPN, Sony	-	-	-	-	-			Revised to S2-165914.	Revised	S2-165914
7.1	S2-165914	SID NEW	New SID on architecture enhancements to ProSe UE-to-Network Relay	Huawei, HiSilicon, Qualcomm Incorporated, LG Electronics, Nokia, Convida Wireless, KPN, Sony, Intel, China Mobile, AT&T, ITRI, Samsung, InterDigital, China Unicom	-	-	-	-	-			Revision of S2-165701. Revised to S2-166212.	Revised	S2-166212
7.1	S2-166212	SID NEW	New SID on architecture enhancements to ProSe UE-to-Network Relay	Huawei, HiSilicon, Qualcomm Incorporated, LG Electronics, Nokia, Convida Wireless, KPN, Sony, Intel, China Mobile, AT&T, ITRI, Samsung, InterDigital, China Unicom, Vodafone	-	-	-	-	-			Revision of S2-165914. Approved	Approved	
7.1	S2-165544	DISCUSSION	Proposed Way Forward of NextGen for R15	China Mobile (Rapporteurs)	-	-	-	-	-	Rel-15		Noted	Noted	
7.1	S2-165793	P-CR	Proposed working strategy to organize NextGen normative work	ZTE	23.799	-	-	-	-		FS_NextGen	LATE DOC: Rx 11/10, 19:40. Noted	Noted	
7.1	S2-165545	WID new	DRAFT Proposed WID for normative work of NextGen in R15	China Mobile, Nokia	-	-	-	-	-	Rel-15		Not Handled	Not Handled	
7.1	S2-165786	DISCUSSION	Structuring the TS work and phase 2 of the NextGen study	Huawei, HiSilicon	-	-	-	-	-	Rel-15		LATE DOC: Rx 16/10, 22:00. Noted	Noted	
7.1	S2-165900	DISCUSSION	Proposed structure of the Rel-15 NextGen	Ericsson	-	-	-	-	-			LATE REQ. LATE DOC: WITHDRAW	Withdrawn	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
			work									N (not provided)		
7.1	S2-165901	WID NEW	New WID: Architecture for Next Generation System	Ericsson	-	-	-	-	-			LATE REQ. LATE DOC: Rx 17/10, 11:35. Not Handled	Not Handled	
7.3	S2-166025	Other	Identifying relevant questions for taking conclusions on NG study	SA WG2 Chairman	-	-	-	-	-	-	-	This proposal was endorsed.	Endorsed	
7.3	S2-165838	OTHER	Scope of SA WG2#118-bis	SA WG2 Chairman	-	-	-	-	-			The reduced scope for the next meeting was endorsed.	Endorsed	

777 Entries.

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A.3 Documents for e-mail approval

TD	Type	Title	Source	Rel	Work Item	Comment	Revision of TD
S2-165986	LS OUT	[DRAFT] Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	SA WG2	-	-	Created in parallel session. Response to S2-165907 and S2-166148. This was left for e-mail approval. Revision 8 approved. Revised to S2-166286.	
S2-166011	LS OUT	[DRAFT] LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT	SA WG2	-	-	Revision of S2-165973. This was left for e-mail approval. e-mail approved. Revised to remove 'draft' in S2-166285	S2-165973
S2-166090	LS OUT	Reply LS on QCI for CLUE Messages	SA WG2	-	-	Created in parallel session. Response to S2-165479. This was left for e-mail approval. Revision 1 approved. Revised to S2-166287.	
S2-166107	LS OUT	[DRAFT] LS on migration from Option 3 to NextGen Core	Qualcomm Incorporated	Rel-14		Revision of S2-165672. This was left for e-mail approval. e-mail revision 3 approved. Revised to S2-166288.	S2-165672
S2-166133	P-CR	Interim agreements on the Policy Framework	Ericsson, ZTE, Oracle		FS_NextGen	Revision of S2-165536. This was left for e-mail approval. e-mail approved	S2-165536
S2-166190	LS OUT	[DRAFT] LS on NextGen QoS interim agreements	Intel	-	-	Revision of S2-165999. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166289.	S2-165999
S2-166239	LS OUT	[DRAFT] LS to GSMA on Next Generation Roaming	SA WG2	Rel-14		Revision of S2-165916. This was left for e-mail approval. e-mail revision 2 approved. Revised to S2-166290.	S2-165916
S2-166259	P-CR	Policy on RAT/Frequency Selection Priority	Huawei, HiSilicon, NICT, Nokia		FS_NextGen	Revision of S2-166137. This was left for e-mail approval. e-mail approved	S2-166137
S2-166260	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT		FS_NextGen	Revision of S2-166241. This was left for e-mail approval. e-mail revision 5 approved. Revised to S2-166291.	S2-166241
S2-166261	P-CR	Update to Solution 18.4	Intel, Samsung		FS_NextGen	Revision of S2-166103. This was left for e-mail approval. e-mail revision 2 approved. Revised to S2-166292.	S2-166103
S2-166263	P-CR	Way forward on EPC-NG Core Interworking	Qualcomm Incorporated, Huawei, Nokia		FS_NextGen	Revision of S2-166104. This was left for e-mail approval. e-mail approved	S2-166104
S2-166264	P-CR	Key Issue #19: EPC/NGCN updates for 'virtualisation'	Vodafone, Deutsche Telekom AG		FS_NextGen	Revision of S2-166132. This was left for e-mail approval. e-mail approved	S2-166132
S2-166269	P-CR	AMBR enforcement	ZTE Corporation	-	FS_NextGen	Revision of S2-166189. This was left for e-mail approval. e-mail approved	S2-166189
S2-166270	P-CR	Evaluation & Conclusion Key issue #2	Ericsson		FS_CIoT_Ext	Revision of S2-165521. This was left for e-mail approval. Noted	S2-165521
S2-166271	P-CR	Update to interim agreements for QoS framework	Intel	-	FS_NextGen	Revision of S2-166184. This was left for e-mail approval. e-mail revision 4 approved. Revised to S2-166293.	S2-166184
S2-166272	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	-	FS_NextGen	Revision of S2-166187. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166294.	S2-166187
S2-166274	CR	23.214 CR0013R3 (Rel-14, 'F'): Sx Session Level	Huawei, HiSilicon	Rel-	CUPS	Revision of S2-166072. This was left for	S2-166072

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TD	Type	Title	Source	Rel	Work Item	Comment	Revision of TD
		Reporting Procedure Update		14		e-mail approval. e-mail approved. This CR was agreed	
S2-166275	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	CATT		FS_NextGen	Revision of S2-166236. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166295.	S2-166236
S2-166276	P-CR	Interim agreement on paging area management	LG Electronics		FS_NextGen	Revision of S2-166224. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166296.	S2-166224
S2-166277	P-CR	Way Forward on UE reachability management	CATT		FS_NextGen	Revision of S2-166225. This was left for e-mail approval. e-mail revision 1 approved. Revised to S2-166297.	S2-166225
S2-166280	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell		FS_NextGen	Revision of S2-166052. This was left for e-mail approval. e-mail revision 5 approved. Revised to S2-166298.	S2-166052

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A.3.1 Documents created by MCC after e-mail approval

AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
6.15	S2-166285	LS OUT	LS on Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT	SA WG2	-	-	-	-	-	-	-	e-mail revision of S2-166011. Approved	Approved	
6.15	S2-166286	LS OUT	Response LS on Enhanced Coverage authorization impact on cell and PLMN selection procedures	SA WG2	-	-	-	-	-	-	-	Response to S2-165907 and S2-166148. e-mail revision 8 of S2-165986. Approved	Approved	
6.2	S2-166287	LS OUT	Reply LS on QCI for CLUE Messages	SA WG2	-	-	-	-	-	-	-	Response to S2-165479. e-mail revision 1 of S2-166090. Approved	Approved	
6.10.18	S2-166288	LS OUT	LS on migration from Option 3 to NextGen Core	SA WG2	-	-	-	-	-	Rel-14		e-mail revision 3 of S2-166107. Approved	Approved	
6.10.2	S2-166289	LS OUT	LS on NextGen QoS interim agreements	SA WG2	-	-	-	-	-	-	-	e-mail revision 1 of S2-166190. Approved	Approved	
6.10	S2-166290	LS OUT	LS to GSMA on Next Generation Roaming	SA WG2	-	-	-	-	-	Rel-14		e-mail revision 2 of S2-166239. Approved	Approved	
6.10.4	S2-166291	P-CR	Solution evaluation and selection for UE simultaneously connected to 3GPP and N3GPP (sol 4.20 and 4.24)	Huawei, LGE, BT	23.799	-	-	-	-		FS_NextGen	e-mail revision 5 of S2-166260. Approved	Approved	
6.10.18	S2-166292	P-CR	Update to Solution 18.4	Intel, Samsung	23.799	-	-	-	-		FS_NextGen	e-mail revision 2 of S2-166261. Approved	Approved	
6.10.2	S2-166293	P-CR	Update to interim agreements for QoS framework	Intel	23.799	-	-	-	-	-	FS_NextGen	e-mail revision 4 of S2-166271. Approved	Approved	

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AI	TD	Type	Title	Source	Specification	CRNo	CRrev	Cat	Ver	Rel	WI	Comment	Decision	Revised to TD
6.10.2	S2-166294	P-CR	Packet Filter with Wildcards and Update the Interim Agreement on Reflective Qos	Huawei, HiSilicon	23.799	-	-	-	-	-	FS_NextGen	e-mail revision 1 of S2-166272. Approved	Approved	
6.10.3	S2-166295	P-CR	Consolidated proposals on Interim Agreements on Mobility Pattern	CATT	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166275. Approved	Approved	
6.10.3	S2-166296	P-CR	Interim agreement on paging area management	LG Electronics	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166276. Approved	Approved	
6.10.3	S2-166297	P-CR	Way Forward on UE reachability management	CATT	23.799	-	-	-	-		FS_NextGen	e-mail revision 1 of S2-166277. Approved	Approved	
6.10.4	S2-166298	P-CR	Interim agreement for MMF-SMF split and Update of Solution 4.16 (Signalling layer integrity between MM and SM entities)	Nokia, Alcatel-Lucent Shanghai Bell	23.799	-	-	-	-		FS_NextGen	e-mail revision 5 of S2-166280. Approved	Approved	

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Annex B Change Requests

B.1 List of all CRs for meeting #117

Meeting	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	TD	Source	Status	Work Item
S2-117	23.060	2015	-	Rel-14	Authorization of use of Coverage Enhancement	B	14.1.0	S2-165741	Intel	Revised	CIoT_Ext
S2-117	23.060	2015	1	Rel-14	Authorization of use of Coverage Enhancement	B	14.1.0	S2-165988	Intel, Orange	Postponed	CIoT_Ext
S2-117	23.161	0024	-	Rel-13	NBIFOM with RAN Controlled WLAN Interworking	F	13.4.0	S2-165553	Ericsson	Revised	NBIFOM
S2-117	23.161	0024	1	Rel-13	NBIFOM with RAN Controlled WLAN Interworking	F	13.4.0	S2-165934	Ericsson, Intel	Revised	NBIFOM
S2-117	23.161	0024	2	Rel-13	NBIFOM with RAN Controlled WLAN Interworking	F	13.4.0	S2-166229	Ericsson, Intel, Broadcom	Agreed	NBIFOM
S2-117	23.161	0025	-	Rel-13	Correction related to RAN rules	F	13.4.0	S2-165841	Intel	Noted	NBIFOM
S2-117	23.167	0305	-	Rel-14	Update with SEW2 capabilities	F	14.1.0	S2-165796	Nokia	Revised	SEW2
S2-117	23.167	0305	1	Rel-14	Update with SEW2 capabilities	F	14.1.0	S2-165947	Nokia	Agreed	SEW2
S2-117	23.167	0306	-	Rel-14	Correction from IMPI to IMPU	F	14.1.0	S2-165849	NTT DOCOMO	Revised	V8
S2-117	23.167	0306	1	Rel-14	Correction from IMPI to IMPU	F	14.1.0	S2-165945	NTT DOCOMO	Agreed	V8
S2-117	23.203	1067	-	Rel-14	Optimization for push mode and combination of pull and push mode	F	14.1.0	S2-165665	Nokia, Alcatel-Lucent Shanghai Bell	Noted	SDCI
S2-117	23.203	1068	-	Rel-14	QCI or/and ARP of the Default EPS Bearer change at a certain time on Gx	B	14.1.0	S2-165699	Verizon, Oracle, Nokia	Revised	TEI14
S2-117	23.203	1068	1	Rel-14	QCI or/and ARP of the Default EPS Bearer change at a certain time on Gx	B	14.1.0	S2-166091	Verizon, Oracle, Nokia	Withdrawn	TEI14
S2-117	23.203	1069	-	Rel-13	Remove 'same media type' requirement for Priority Sharing	F	13.9.0	S2-165726	Motorola Solutions, Airwave	Revised	TEI13, MCPTT
S2-117	23.203	1069	1	Rel-13	Remove 'same media type' requirement for Priority Sharing	F	13.9.0	S2-166088	Motorola Solutions, Airwave	Agreed	MCPTT
S2-117	23.203	1070	-	Rel-14	Remove 'same media type' requirement for Priority Sharing	A	14.1.0	S2-165727	Motorola Solutions, Airwave	Revised	MCPTT
S2-117	23.203	1070	1	Rel-14	Remove 'same media type' requirement for Priority Sharing	A	14.1.0	S2-166089	Motorola Solutions, Airwave	Agreed	MCPTT
S2-117	23.214	0001	-	Rel-14	Controlling the UP to buffer, drop or duplicate data packets	F	14.0.0	S2-165496	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0001	1	Rel-14	Controlling the UP to buffer, drop or duplicate data packets	F	14.0.0	S2-166060	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0001	2	Rel-14	Controlling the UP to buffer, drop or duplicate data packets	F	14.0.0	S2-166176	Nokia, Alcatel-Lucent Shanghai Bell	Noted	CUPS
S2-117	23.214	0002	-	Rel-14	Corrections to User Plane selection function	F	14.0.0	S2-165497	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0002	1	Rel-14	Corrections to User Plane selection function	F	14.0.0	S2-166064	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0002	2	Rel-14	Corrections to User Plane selection function	F	14.0.0	S2-166078	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	CUPS
S2-117	23.214	0003	-	Rel-14	Corrections to buffering in the user	F	14.0.0	S2-165499	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS

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Meeting	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	TD	Source	Status	Work Item
					plane						
S2-117	23.214	0003	1	Rel-14	Corrections to buffering in the user plane	F	14.0.0	S2-166062	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0003	2	Rel-14	Corrections to buffering in the user plane	F	14.0.0	S2-166174	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	CUPS
S2-117	23.214	0004	-	Rel-14	Sx parameter corrections	B	14.0.0	S2-165554	Ericsson	Revised	CUPS
S2-117	23.214	0004	1	Rel-14	Sx parameter corrections	B	14.0.0	S2-166059	Ericsson	Revised	CUPS
S2-117	23.214	0004	2	Rel-14	Sx parameter corrections	B	14.0.0	S2-166177	Ericsson	Revised	CUPS
S2-117	23.214	0004	3	Rel-14	Sx parameter corrections	B	14.0.0	S2-166179	Ericsson	Revised	CUPS
S2-117	23.214	0004	4	Rel-14	Sx parameter corrections	F	14.0.0	S2-166273	Ericsson	Agreed	CUPS
S2-117	23.214	0005	-	Rel-14	SDCI support	B	14.0.0	S2-165662	Nokia, Alcatel-Lucent Shanghai Bell	Noted	CUPS
S2-117	23.214	0006	-	Rel-14	Update to PCC/ADC related functions	F	14.0.0	S2-165663	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0006	1	Rel-14	Update to PCC/ADC related functions	F	14.0.0	S2-166066	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0006	2	Rel-14	Update to PCC/ADC related functions	F	14.0.0	S2-166178	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CUPS
S2-117	23.214	0006	3	Rel-14	Update to PCC/ADC related functions	F	14.0.0	S2-166214	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	CUPS
S2-117	23.214	0007	-	Rel-14	Update to UP Selection Section	C	14.0.0	S2-165746	Samsung	Revised	CUPS
S2-117	23.214	0007	1	Rel-14	Update to UP Selection Section	C	14.0.0	S2-166063	Samsung	Revised	CUPS
S2-117	23.214	0007	2	Rel-14	Update to UP Selection Section	F	14.0.0	S2-166077	Samsung	Agreed	CUPS
S2-117	23.214	0008	-	Rel-14	Text updates for 3GPP TS 23.401 call flows	C	14.0.0	S2-165750	Samsung	Revised	CUPS
S2-117	23.214	0008	1	Rel-14	Text updates for 3GPP TS 23.401 call flows	F	14.0.0	S2-166068	Samsung	Revised	CUPS
S2-117	23.214	0008	2	Rel-14	Text updates for 3GPP TS 23.401 call flows	F	14.0.0	S2-166074	Samsung	Agreed	CUPS
S2-117	23.214	0009	-	Rel-14	Text updates for 3GPP TS 23.402 call flows	C	14.0.0	S2-165753	Samsung	Revised	CUPS
S2-117	23.214	0009	1	Rel-14	Text updates for 3GPP TS 23.402 call flows	F	14.0.0	S2-166069	Samsung	Revised	CUPS
S2-117	23.214	0009	2	Rel-14	Text updates for 3GPP TS 23.402 call flows	F	14.0.0	S2-166073	Samsung	Agreed	CUPS
S2-117	23.214	0010	-	Rel-14	Buffering and F-TEIDu Allocation	B	14.0.0	S2-165875	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	Revised	CUPS
S2-117	23.214	0010	1	Rel-14	Buffering and F-TEIDu Allocation	B	14.0.0	S2-166061	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	Revised	CUPS
S2-117	23.214	0010	2	Rel-14	Buffering and F-TEIDu Allocation	B	14.0.0	S2-166175	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	Agreed	CUPS
S2-117	23.214	0011	-	Rel-14	Sx Parameters	B	14.0.0	S2-165877	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0011	1	Rel-14	Sx Parameters	B	14.0.0	S2-166071	Huawei, HiSilicon	Withdrawn	CUPS
S2-117	23.214	0012	-	Rel-14	Support of PGW Pause of Charging	B	14.0.0	S2-165886	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0012	1	Rel-14	Support of PGW Pause of Charging	B	14.0.0	S2-166067	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0012	2	Rel-14	Support of PGW Pause of Charging	F	14.0.0	S2-166075	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0012	3	Rel-14	Support of PGW Pause of Charging	F	14.0.0	S2-166213	Huawei, HiSilicon	Agreed	CUPS
S2-117	23.214	0013	-	Rel-14	Sx Session Level Reporting Procedure Update	B	14.0.0	S2-165887	Huawei, HiSilicon	Revised	CUPS

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S2-117	23.214	0013	1	Rel-14	Sx Session Level Reporting Procedure Update	B	14.0.0	S2-166070	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0013	2	Rel-14	Sx Session Level Reporting Procedure Update	F	14.0.0	S2-166072	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0013	3	Rel-14	Sx Session Level Reporting Procedure Update	F	14.0.0	S2-166274	Huawei, HiSilicon	Agreed	CUPS
S2-117	23.214	0014	-	Rel-14	Solution of TDF-U Selection in case of Unsolicited Reporting	B	14.0.0	S2-165888	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0014	1	Rel-14	Solution of TDF-U Selection in case of Unsolicited Reporting	B	14.0.0	S2-166065	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0014	2	Rel-14	Solution of TDF-U Selection in case of Unsolicited Reporting	F	14.0.0	S2-166076	Huawei, HiSilicon	Revised	CUPS
S2-117	23.214	0014	3	Rel-14	Solution of TDF-U Selection in case of Unsolicited Reporting	F	14.0.0	S2-166215	Huawei, HiSilicon	Agreed	CUPS
S2-117	23.228	1161	-	Rel-13	Editorial change reflecting IMS being access agnostic	F	13.7.0	S2-165510	Ericsson	Revised	TEI13
S2-117	23.228	1161	1	Rel-13	Editorial change reflecting IMS being access agnostic	F	13.7.0	S2-165937	Ericsson	Agreed	TEI13
S2-117	23.228	1162	-	Rel-13	Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	F	13.7.0	S2-165511	Ericsson	Revised	TEI13
S2-117	23.228	1162	1	Rel-13	Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	F	13.7.0	S2-165939	Ericsson	Agreed	TEI13
S2-117	23.228	1163	-	Rel-14	Editorial change reflecting IMS being access agnostic	A	14.1.0	S2-165512	Ericsson	Revised	TEI14
S2-117	23.228	1163	1	Rel-14	Editorial change reflecting IMS being access agnostic	A	14.1.0	S2-165938	Ericsson	Agreed	TEI13
S2-117	23.228	1164	-	Rel-14	Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	A	14.1.0	S2-165513	Ericsson	Revised	TEI14
S2-117	23.228	1164	1	Rel-14	Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	A	14.1.0	S2-165940	Ericsson	Agreed	TEI13
S2-117	23.237	0498	-	Rel-14	Robust Call Setup for VoLTE subscriber in LTE	F	14.1.0	S2-165635	Huawei, HiSilicon	Revised	RobVoLTE
S2-117	23.237	0498	1	Rel-14	Robust Call Setup for VoLTE subscriber in LTE	F	14.1.0	S2-165944	Huawei, HiSilicon	Agreed	RobVoLTE
S2-117	23.237	0499	-	Rel-14	DRVCC for emergency call with S2a/S2b only	F	14.1.0	S2-165798	Nokia	Agreed	SEW2
S2-117	23.246	0405	-	Rel-14	Corrections of MBMS Shared Network	F	14.0.0	S2-165700	Huawei, HiSilicon	Revised	AE_enTV
S2-117	23.246	0405	1	Rel-14	Corrections of MBMS Shared Network	F	14.0.0	S2-166021	Huawei, HiSilicon	Agreed	AE_enTV
S2-117	23.285	0001	-	Rel-14	V2X message handling over LTE Uu	F	14.0.0	S2-165509	Ericsson	Revised	V2XARC
S2-117	23.285	0001	1	Rel-14	V2X message handling over LTE Uu	F	14.0.0	S2-166030	Ericsson	Revised	V2XARC
S2-117	23.285	0001	2	Rel-14	V2X message handling over LTE Uu	F	14.0.0	S2-166038	Ericsson	Agreed	V2XARC
S2-117	23.285	0002	-	Rel-14	Introducing reliability parameter on PC5 QoS handling	B	14.0.0	S2-165584	Huawei, HiSilicon	Noted	V2XARC

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S2-117	23.285	0003	-	Rel-14	Update of V2X impacts to EPC procedures	B	14.0.0	S2-165630	Huawei, Hisilicon, LG Electronics	Revised	V2XARC
S2-117	23.285	0003	1	Rel-14	Update of V2X impacts to EPC procedures	B	14.0.0	S2-166032	Huawei, Hisilicon, LG Electronics, Ericsson	Agreed	V2XARC
S2-117	23.285	0004	-	Rel-14	Mapping between PPPP and latency for autonomous resources selection mode	B	14.0.0	S2-165631	Huawei, Hisilicon, LG Electronics, Ericsson	Revised	V2XARC
S2-117	23.285	0004	1	Rel-14	Mapping between PPPP and latency for autonomous resources selection mode	B	14.0.0	S2-166029	Huawei, Hisilicon, LG Electronics, Ericsson	Agreed	V2XARC
S2-117	23.285	0005	-	Rel-14	Update of Functional entities description	F	14.0.0	S2-165632	Huawei, Hisilicon	Revised	V2XARC
S2-117	23.285	0005	1	Rel-14	Update of Functional entities description	F	14.0.0	S2-166035	Huawei, Hisilicon	Revised	V2XARC
S2-117	23.285	0005	2	Rel-14	Update of Functional entities description	F	14.0.0	S2-166039	Huawei, Hisilicon	Agreed	V2XARC
S2-117	23.285	0006	-	Rel-14	Subscription to V2X services	B	14.0.0	S2-165636	LG Electronics	Revised	V2XARC
S2-117	23.285	0006	1	Rel-14	Subscription to V2X services	B	14.0.0	S2-166033	LG Electronics	Agreed	V2XARC
S2-117	23.285	0007	-	Rel-14	Clarification on MBMS for LTE-Uu based V2X architecture reference model	F	14.0.0	S2-165637	LG Electronics	Agreed	V2XARC
S2-117	23.285	0008	-	Rel-14	PC5-U stack instance for V2X use	F	14.0.0	S2-165638	LG Electronics	Noted	V2XARC
S2-117	23.285	0009	-	Rel-14	Uplink distribution deployment option	B	14.0.0	S2-165679	KPN, LG Electronics	Revised	V2XARC
S2-117	23.285	0009	1	Rel-14	Uplink distribution deployment option	F	14.0.0	S2-166034	KPN, LG Electronics	Agreed	V2XARC
S2-117	23.285	0010	-	Rel-14	Clarification on location mapping at V2X Application Server	F	14.0.0	S2-165713	Qualcomm Incorporated, Ericsson,	Revised	V2XARC
S2-117	23.285	0010	1	Rel-14	Clarification on location mapping at V2X Application Server	F	14.0.0	S2-166036	Qualcomm Incorporated, Ericsson,	Agreed	V2XARC
S2-117	23.285	0011	-	Rel-14	Clarification on V2X message reception using MBMS Receive Only Mode	F	14.0.0	S2-165714	Qualcomm Incorporated,	Revised	V2XARC
S2-117	23.285	0011	1	Rel-14	Clarification on V2X message reception using MBMS Receive Only Mode	F	14.0.0	S2-166037	Qualcomm Incorporated	Noted	V2XARC
S2-117	23.285	0012	-	Rel-14	Definition of the USD for Uu based V2X communication and V2X Application Server discovery	F	14.0.0	S2-165717	Qualcomm Incorporated,	Revised	V2XARC
S2-117	23.285	0012	1	Rel-14	Definition of the USD for Uu based V2X communication and V2X Application Server discovery	F	14.0.0	S2-166031	Qualcomm Incorporated	Agreed	V2XARC
S2-117	23.292	0234	1	Rel-13	ICS MSC with I2 and T-ADS handling interaction	F	13.3.0	S2-165792	Nokia	Merged	TEI13, SAES-CSFB
S2-117	23.292	0239	-	Rel-14	Correction of ICS IWF behaviour for inbound roamers	F	14.0.0	S2-165652	NEC	Revised	SeDoC
S2-117	23.292	0239	1	Rel-14	Correction of ICS IWF behaviour for inbound roamers	F	14.0.0	S2-165923	NEC, Deutsche Telekom AG	Agreed	SeDoC
S2-117	23.292	0240	-	Rel-14	ICS MSC with I2 and T-ADS handling interaction	A	14.0.0	S2-165794	Nokia	Merged	TEI13, SAES-CSFB

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S2-117	23.292	0241	-	Rel-13	Mobile terminating via I2 while the UE moves the a new MSC.	F	13.3.0	S2-165818	ZTE	Revised	TEI13, ICSRA
S2-117	23.292	0241	1	Rel-13	Mobile terminating via I2 while the UE moves the a new MSC.	F	13.3.0	S2-165941	ZTE, Nokia	Postponed	TEI13, ICSRA
S2-117	23.292	0242	-	Rel-14	Mobile terminating via I2 while the UE moves the a new MSC.	A	14.0.0	S2-165819	ZTE	Revised	TEI13, ICSRA
S2-117	23.292	0242	1	Rel-14	Mobile terminating via I2 while the UE moves the a new MSC.	A	14.0.0	S2-165942	ZTE, Nokia	Postponed	TEI13, ICSRA
S2-117	23.303	0321	-	Rel-14	EPS bearer release for ProSe UE-to-Network Relay	C	14.0.0	S2-165541	ASUSTeK	Revised	eProSe-Ext-SA2
S2-117	23.303	0321	1	Rel-14	EPS bearer release for ProSe UE-to-Network Relay	A	14.0.0	S2-166019	ASUSTeK	Agreed	eProSe-Ext-SA2
S2-117	23.303	0322	-	Rel-13	EPS bearer release for ProSe UE-to-Network Relay	F	13.5.0	S2-166020	ASUSTeK	Agreed	eProSe-Ext-SA2
S2-117	23.401	3092	1	Rel-14	Inter UE QoS for NB-IoT control plane CIoT EPS optimisation	B	14.1.0	S2-165891	Vodafone	-	CIoT_Ext
S2-117	23.401	3130	-	Rel-14	Corrections for allowing seamless handovers of emergency sessions to WLAN	F	14.1.0	S2-165493	Nokia, Alcatel-Lucent Shanghai Bell	Revised	SEW2
S2-117	23.401	3130	1	Rel-14	Corrections for allowing seamless handovers of emergency sessions to WLAN	F	14.1.0	S2-165935	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	SEW2
S2-117	23.401	3131	-	Rel-14	Reliable UE delivery based on hop by hop ack (5c)	C	14.1.0	S2-165522	Ericsson	Revised	CIoT_Ext
S2-117	23.401	3131	1	Rel-14	Reliable UE delivery based on hop by hop ack (5c)	C	14.1.0	S2-165992	Ericsson	Postponed	CIoT_Ext
S2-117	23.401	3132	-	Rel-14	Overload Start message for control plane data only	C	14.1.0	S2-165525	Ericsson	Merged	CIoT_Ext
S2-117	23.401	3133	-	Rel-14	CIoT_KI7_sol8 - Control Plane data back-off timer	B	14.1.0	S2-165548	NEC	Merged	CIoT_Ext
S2-117	23.401	3134	-	Rel-14	CIoT_KI7_sol9 - Overload Start for control plane data	B	14.1.0	S2-165549	NEC	Revised	CIoT_Ext
S2-117	23.401	3134	1	Rel-14	CIoT_KI7_sol9 - Overload Start for control plane data	B	14.1.0	S2-165991	NEC	Noted	CIoT_Ext
S2-117	23.401	3135	-	Rel-14	Authorization of use of Coverage Enhancement	B	14.1.0	S2-165568	Intel	Revised	CIoT_Ext
S2-117	23.401	3135	1	Rel-14	Authorization of use of Coverage Enhancement	B	14.1.0	S2-165987	Intel	Postponed	CIoT_Ext
S2-117	23.401	3136	-	Rel-13	Clarifying the UE behaviour for switch to UP	F	13.8.0	S2-165670	Qualcomm Incorporated	Noted	CIoT
S2-117	23.401	3137	-	Rel-14	Clarifying the UE behaviour for switch to UP	A	14.1.0	S2-165671	Qualcomm Incorporated	Revised	CIoT
S2-117	23.401	3137	1	Rel-14	Clarifying the UE behaviour for switch to UP	F	14.1.0	S2-166003	Qualcomm Incorporated	Agreed	CIoT
S2-117	23.401	3138	-	Rel-13	Correction of handling of resume cause	F	13.8.0	S2-165674	Intel	Agreed	CIoT
S2-117	23.401	3139	-	Rel-14	Correction of handling of resume cause	A	14.1.0	S2-165675	Intel	Agreed	CIoT
S2-117	23.401	3140	-	Rel-13	APN Rate Control and emergency	F	13.8.0	S2-165736	HTC	Revised	CIoT

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					bearer service						
S2-117	23.401	3140	1	Rel-13	APN Rate Control and emergency bearer service	F	13.8.0	S2-166004	HTC	Revised	CIoT
S2-117	23.401	3140	2	Rel-13	APN Rate Control and emergency bearer service	F	13.8.0	S2-166194	HTC	Agreed	CIoT
S2-117	23.401	3141	-	Rel-14	APN rate control and emergency bearer service	A	14.1.0	S2-165737	HTC	Revised	CIoT
S2-117	23.401	3141	1	Rel-14	APN rate control and emergency bearer service	A	14.1.0	S2-166005	HTC	Agreed	CIoT
S2-117	23.401	3142	-	Rel-14	Clarification to the APN rate control procedure	F	14.1.0	S2-165738	HTC	Merged	CIoT
S2-117	23.401	3143	-	Rel-14	Control Plane data back-off timer introduction	B	14.1.0	S2-165744	Qualcomm Incorporated	Revised	CIoT
S2-117	23.401	3143	1	Rel-14	Control Plane data back-off timer introduction	B	14.1.0	S2-165990	Qualcomm Incorporated, NEC, Intel, Samsung	Revised	CIoT
S2-117	23.401	3143	2	Rel-14	Control Plane data back-off timer introduction	B	14.1.0	S2-166198	Qualcomm Incorporated, NEC, Intel, Samsung	Agreed	CIoT
S2-117	23.401	3144	-	Rel-14	Missing indirect forwarding tunnel deletion in TAU with SGW change	F	14.1.0	S2-165857	Nokia, Alcatel-Lucent Shanghai Bell	Revised	CIoT
S2-117	23.401	3144	1	Rel-14	Missing indirect forwarding tunnel deletion in TAU with SGW change	F	14.1.0	S2-166006	Nokia, Alcatel-Lucent Shanghai Bell, Ericsson	Revised	CIoT
S2-117	23.401	3144	2	Rel-14	Missing indirect forwarding tunnel deletion in TAU with SGW change	F	14.1.0	S2-166197	Nokia, Alcatel-Lucent Shanghai Bell, Ericsson	Agreed	HLcom
S2-117	23.402	2967	-	Rel-14	Correction of emergency services continuity between WLAN and 3GPP access	F	14.1.0	S2-165494	Nokia, Alcatel-Lucent Shanghai Bell	Revised	SEW2
S2-117	23.402	2967	1	Rel-14	Correction of emergency services continuity between WLAN and 3GPP access	F	14.1.0	S2-165936	Nokia, Alcatel-Lucent Shanghai Bell	Revised	SEW2
S2-117	23.402	2967	2	Rel-14	Correction of emergency services continuity between WLAN and 3GPP access	F	14.1.0	S2-166230	Nokia, Alcatel-Lucent Shanghai Bell	Revised	SEW2
S2-117	23.402	2967	3	Rel-14	Correction of emergency services continuity between WLAN and 3GPP access	F	14.1.0	S2-166266	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	SEW2
S2-117	23.682	0227	3	Rel-14	Group based MONTE Event Configuration via HSS	C	14.1.0	S2-165899	Samsung	Revised	GENCEF
S2-117	23.682	0227	4	Rel-14	Group based MONTE Event Configuration via HSS	C	14.1.0	S2-165979	Samsung	Revised	GENCEF
S2-117	23.682	0227	5	Rel-14	Group based MONTE Event Configuration via HSS	C	14.1.0	S2-166183	Samsung	Revised	GENCEF
S2-117	23.682	0227	6	Rel-14	Group based MONTE Event Configuration via HSS	C	14.1.0	S2-166193	Samsung	Agreed	GENCEF
S2-117	23.682	0234	-	Rel-14	Reliable UE delivery based on hop by hop ack (5c)	C	14.1.0	S2-165523	Ericsson	Revised	CIoT_Ext
S2-117	23.682	0234	1	Rel-14	Reliable UE delivery based on hop by hop ack (5c)	C	14.1.0	S2-165993	Ericsson	Postponed	CIoT_Ext
S2-117	23.682	0235	-	Rel-14	Support of Enhanced Coverage	B	14.1.0	S2-165571	Intel	Revised	CIoT_Ext

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					Authorization Control via SCEF						
S2-117	23.682	0235	1	Rel-14	Support of Enhanced Coverage Authorization Control via SCEF	B	14.1.0	S2-165989	Intel	Postponed	CIoT_Ext
S2-117	23.682	0236	-	Rel-14	Using individual SCEF reference ID during the group-based monitoring event configuration procedure	C	14.1.0	S2-165613	Huawei, HiSilicon	-	GENCEF
S2-117	23.682	0237	-	Rel-14	SCEF Behavior when MT NIDD Causes a Trigger	F	14.1.0	S2-165707	Convida Wireless, Oracle	Revised	CIoT
S2-117	23.682	0237	1	Rel-14	SCEF Behavior when MT NIDD Causes a Trigger	F	14.1.0	S2-166007	Convida Wireless, Oracle	Agreed	CIoT
S2-117	23.682	0238	-	Rel-14	CIoT Data Delivery Service	B	14.1.0	S2-165710	Convida Wireless	Revised	CIoT
S2-117	23.682	0238	1	Rel-14	CIoT Data Delivery Service	B	14.1.0	S2-165994	Convida Wireless	Postponed	CIoT
S2-117	23.682	0239	-	Rel-14	Enhancements to monitoring event configuration and reporting procedures for group of UEs	C	14.1.0	S2-165731	ZTE	Revised	GENCEF
S2-117	23.682	0239	1	Rel-14	Enhancements to monitoring event configuration and reporting procedures for group of UEs	C	14.1.0	S2-165980	ZTE	Revised	GENCEF
S2-117	23.682	0239	2	Rel-14	Enhancements to monitoring event configuration and reporting procedures for group of UEs	C	14.1.0	S2-166182	ZTE	Revised	GENCEF
S2-117	23.682	0239	3	Rel-14	Enhancements to monitoring event configuration and reporting procedures for group of UEs	C	14.1.0	S2-166192	ZTE	Agreed	GENCEF
S2-117	23.682	0240	-	Rel-14	Group monitoring event configuration and reporting for UEs - Solution Option 1A	B	14.1.0	S2-165734	ZTE	-	GENCEF
S2-117	23.682	0241	-	Rel-13	Corrections for MT NIDD procedure to handle multiple non-IP data	F	13.7.0	S2-165759	NEC	Revised	CIoT
S2-117	23.682	0241	1	Rel-13	Corrections for MT NIDD procedure to handle multiple non-IP data	F	13.7.0	S2-166008	NEC	Revised	CIoT
S2-117	23.682	0241	2	Rel-13	Corrections for MT NIDD procedure to handle multiple non-IP data	F	13.7.0	S2-166195	NEC	Revised	CIoT
S2-117	23.682	0241	3	Rel-13	Corrections for MT NIDD procedure to handle multiple non-IP data	F	13.7.0	S2-166267	NEC	Agreed	CIoT
S2-117	23.682	0242	-	Rel-14	Corrections for MT NIDD procedure to handle multiple non-IP data	A	14.1.0	S2-165760	NEC	Revised	CIoT
S2-117	23.682	0242	1	Rel-14	Corrections for MT NIDD procedure to handle multiple non-IP data	A	14.1.0	S2-166009	NEC	Revised	CIoT
S2-117	23.682	0242	2	Rel-14	Corrections for MT NIDD procedure to handle multiple non-IP data	A	14.1.0	S2-166196	NEC	Revised	CIoT
S2-117	23.682	0242	3	Rel-14	Corrections for MT NIDD procedure to handle multiple non-IP data	A	14.1.0	S2-166268	NEC	Agreed	CIoT
S2-117	23.682	0243	-	Rel-13	Correction of T6a connection establishment parameters	F	13.7.0	S2-165852	Nokia, Alcatel-Lucent Shanghai Bell	Noted	CIoT
S2-117	23.682	0244	-	Rel-14	Correction of T6a Connection Establishment parameters	A	14.1.0	S2-165855	Nokia, Alcatel-Lucent Shanghai Bell	Noted	CIoT
S2-117	23.682	0245	-	Rel-14	Active Time correction in UE Power	F	14.1.0	S2-165859	Nokia, Alcatel-Lucent Shanghai Bell	Revised	TEI14

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					Save Mode						
S2-117	23.682	0245	1	Rel-14	Active Time correction in UE Power Save Mode	A	14.1.0	S2-166022	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	TEI13
S2-117	23.682	0246	-	Rel-13	Active Time correction in UE Power Save Mode	F	13.7.0	S2-166023	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	TEI13

172 Entries.

B.2 List of agreed CRs for meeting #117

Meeting	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	TD	Source	Status	Work Item
S2-117	23.161	0024	2	Rel-13	NBIFOM with RAN Controlled WLAN Interworking	F	13.4.0	S2-166229	Ericsson, Intel, Broadcom	Agreed	NBIFOM
S2-117	23.167	0305	1	Rel-14	Update with SEW2 capabilities	F	14.1.0	S2-165947	Nokia	Agreed	SEW2
S2-117	23.167	0306	1	Rel-14	Correction from IMPI to IMPU	F	14.1.0	S2-165945	NTT DOCOMO	Agreed	V8
S2-117	23.203	1069	1	Rel-13	Remove 'same media type' requirement for Priority Sharing	F	13.9.0	S2-166088	Motorola Solutions, Airwave	Agreed	MCPTT
S2-117	23.203	1070	1	Rel-14	Remove 'same media type' requirement for Priority Sharing	A	14.1.0	S2-166089	Motorola Solutions, Airwave	Agreed	MCPTT
S2-117	23.214	0002	2	Rel-14	Corrections to User Plane selection function	F	14.0.0	S2-166078	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	CUPS
S2-117	23.214	0003	2	Rel-14	Corrections to buffering in the user plane	F	14.0.0	S2-166174	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	CUPS
S2-117	23.214	0004	4	Rel-14	Sx parameter corrections	F	14.0.0	S2-166273	Ericsson	Agreed	CUPS
S2-117	23.214	0006	3	Rel-14	Update to PCC/ADC related functions	F	14.0.0	S2-166214	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	CUPS
S2-117	23.214	0007	2	Rel-14	Update to UP Selection Section	F	14.0.0	S2-166077	Samsung	Agreed	CUPS
S2-117	23.214	0008	2	Rel-14	Text updates for 3GPP TS 23.401 call flows	F	14.0.0	S2-166074	Samsung	Agreed	CUPS
S2-117	23.214	0009	2	Rel-14	Text updates for 3GPP TS 23.402 call flows	F	14.0.0	S2-166073	Samsung	Agreed	CUPS
S2-117	23.214	0010	2	Rel-14	Buffering and F-TEIDu Allocation	B	14.0.0	S2-166175	Huawei, HiSilicon, CMCC, ZTE, Ericsson, Nokia, China Unicom, China Telecom, Intel	Agreed	CUPS
S2-117	23.214	0012	3	Rel-14	Support of PGW Pause of Charging	F	14.0.0	S2-166213	Huawei, HiSilicon	Agreed	CUPS
S2-117	23.214	0013	3	Rel-14	Sx Session Level Reporting Procedure Update	F	14.0.0	S2-166274	Huawei, HiSilicon	Agreed	CUPS
S2-117	23.214	0014	3	Rel-14	Solution of TDF-U Selection in case of Unsolicited Reporting	F	14.0.0	S2-166215	Huawei, HiSilicon	Agreed	CUPS
S2-117	23.228	1161	1	Rel-13	Editorial change reflecting IMS being access agnostic	F	13.7.0	S2-165937	Ericsson	Agreed	TEI13
S2-117	23.228	1162	1	Rel-13	Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	F	13.7.0	S2-165939	Ericsson	Agreed	TEI13
S2-117	23.228	1163	1	Rel-14	Editorial change reflecting IMS being access agnostic	A	14.1.0	S2-165938	Ericsson	Agreed	TEI13
S2-117	23.228	1164	1	Rel-14	Editorial changes and inclusion of Mp Reference Point and missing reference point P-CSCF - I-CSCF	A	14.1.0	S2-165940	Ericsson	Agreed	TEI13
S2-117	23.237	0498	1	Rel-14	Robust Call Setup for VoLTE subscriber in LTE	F	14.1.0	S2-165944	Huawei, HiSilicon	Agreed	RobVoLTE
S2-117	23.237	0499	-	Rel-14	DRVCC for emergency call with S2a/S2b only	F	14.1.0	S2-165798	Nokia	Agreed	SEW2
S2-117	23.246	0405	1	Rel-14	Corrections of MBMS Shared Network	F	14.0.0	S2-166021	Huawei, HiSilicon	Agreed	AE_enTV
S2-117	23.285	0001	2	Rel-14	V2X message handling over LTE Uu	F	14.0.0	S2-166038	Ericsson	Agreed	V2XARC
S2-117	23.285	0003	1	Rel-14	Update of V2X impacts to EPC	B	14.0.0	S2-166032	Huawei, Hisilicon, LG Electronics,	Agreed	V2XARC

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Meeting	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	TD	Source	Status	Work Item
					procedures				Ericsson		
S2-117	23.285	0004	1	Rel-14	Mapping between PPPP and latency for autonomous resources selection mode	B	14.0.0	S2-166029	Huawei, Hisilicon, LG Electronics, Ericsson	Agreed	V2XARC
S2-117	23.285	0005	2	Rel-14	Update of Functional entities description	F	14.0.0	S2-166039	Huawei, Hisilicon	Agreed	V2XARC
S2-117	23.285	0006	1	Rel-14	Subscription to V2X services	B	14.0.0	S2-166033	LG Electronics	Agreed	V2XARC
S2-117	23.285	0007	-	Rel-14	Clarification on MBMS for LTE-Uu based V2X architecture reference model	F	14.0.0	S2-165637	LG Electronics	Agreed	V2XARC
S2-117	23.285	0009	1	Rel-14	Uplink distribution deployment option	F	14.0.0	S2-166034	KPN, LG Electronics	Agreed	V2XARC
S2-117	23.285	0010	1	Rel-14	Clarification on location mapping at V2X Application Server	F	14.0.0	S2-166036	Qualcomm Incorporated, Ericsson,	Agreed	V2XARC
S2-117	23.285	0012	1	Rel-14	Definition of the USD for Uu based V2X communication and V2X Application Server discovery	F	14.0.0	S2-166031	Qualcomm Incorporated	Agreed	V2XARC
S2-117	23.292	0239	1	Rel-14	Correction of ICS IWF behaviour for inbound roamers	F	14.0.0	S2-165923	NEC, Deutsche Telekom AG	Agreed	SeDoC
S2-117	23.303	0321	1	Rel-14	EPS bearer release for ProSe UE-to-Network Relay	A	14.0.0	S2-166019	ASUSTeK	Agreed	eProSe-Ext-SA2
S2-117	23.303	0322	-	Rel-13	EPS bearer release for ProSe UE-to-Network Relay	F	13.5.0	S2-166020	ASUSTeK	Agreed	eProSe-Ext-SA2
S2-117	23.401	3130	1	Rel-14	Corrections for allowing seamless handovers of emergency sessions to WLAN	F	14.1.0	S2-165935	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	SEW2
S2-117	23.401	3137	1	Rel-14	Clarifying the UE behaviour for switch to UP	F	14.1.0	S2-166003	Qualcomm Incorporated	Agreed	CIoT
S2-117	23.401	3138	-	Rel-13	Correction of handling of resume cause	F	13.8.0	S2-165674	Intel	Agreed	CIoT
S2-117	23.401	3139	-	Rel-14	Correction of handling of resume cause	A	14.1.0	S2-165675	Intel	Agreed	CIoT
S2-117	23.401	3140	2	Rel-13	APN Rate Control and emergency bearer service	F	13.8.0	S2-166194	HTC	Agreed	CIoT
S2-117	23.401	3141	1	Rel-14	APN rate control and emergency bearer service	A	14.1.0	S2-166005	HTC	Agreed	CIoT
S2-117	23.401	3143	2	Rel-14	Control Plane data back-off timer introduction	B	14.1.0	S2-166198	Qualcomm Incorporated, NEC, Intel, Samsung	Agreed	CIoT
S2-117	23.401	3144	2	Rel-14	Missing indirect forwarding tunnel deletion in TAU with SGW change	F	14.1.0	S2-166197	Nokia, Alcatel-Lucent Shanghai Bell, Ericsson	Agreed	HLcom
S2-117	23.402	2967	3	Rel-14	Correction of emergency services continuity between WLAN and 3GPP access	F	14.1.0	S2-166266	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	SEW2
S2-117	23.682	0227	6	Rel-14	Group based MONTE Event Configuration via HSS	C	14.1.0	S2-166193	Samsung	Agreed	GENCEF
S2-117	23.682	0237	1	Rel-14	SCEF Behavior when MT NIDD Causes a Trigger	F	14.1.0	S2-166007	Convida Wireless, Oracle	Agreed	CIoT
S2-117	23.682	0239	3	Rel-14	Enhancements to monitoring event configuration and reporting	C	14.1.0	S2-166192	ZTE	Agreed	GENCEF

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Meeting	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	TD	Source	Status	Work Item
					procedures for group of UEs						
S2-117	23.682	0241	3	Rel-13	Corrections for MT NIDD procedure to handle multiple non-IP data	F	13.7.0	S2-166267	NEC	Agreed	CIoT
S2-117	23.682	0242	3	Rel-14	Corrections for MT NIDD procedure to handle multiple non-IP data	A	14.1.0	S2-166268	NEC	Agreed	CIoT
S2-117	23.682	0245	1	Rel-14	Active Time correction in UE Power Save Mode	A	14.1.0	S2-166022	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	TEI13
S2-117	23.682	0246	-	Rel-13	Active Time correction in UE Power Save Mode	F	13.7.0	S2-166023	Nokia, Alcatel-Lucent Shanghai Bell	Agreed	TEI13

51 Entries.

B.2a List of CRs for e-mail approval

Meeting	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	TD	Source	Status	Work Item
S2-117	23.214	0013	3	Rel-14	Sx Session Level Reporting Procedure Update	B	14.0.0	S2-166274	Huawei, HiSilicon	e-mail agreed	CUPS

1 Entries.

B.3 List of agreed P-CRs for meeting #117

Meeting	Spec	Phase	Subject	TD	Source	Status	Work Item
S2-117	23.702		Solution for Key issue 1 - Using USSD/USSI and ADD	S2-165959	BlackBerry UK Ltd	Approved	FS_PS_DATA_OFF
S2-117	23.702		New solution for key issue #1	S2-165958	Huawei, HiSilicon, Intel	Approved	FS_PS_DATA_OFF
S2-117	23.702		Update to Solution 4.4	S2-165949	Ericsson	Approved	FS_PS_DATA_OFF
S2-117	23.702		New Solution 1.5 for Key issue 1	S2-165918	Ericsson	Approved	FS_PS_DATA_OFF
S2-117	23.702		New Solution 2.5 for Key issue 2	S2-165925	Ericsson	Approved	FS_PS_DATA_OFF
S2-117	23.702		Update and evaluation for solution #2.2	S2-165929	Intel, Huawei	Approved	FS_PS_DATA_OFF
S2-117	23.702		New KI#3 solution: Solution using HSS knowledge of PS Data Off UE status avoiding VPLMN impacts for early deployments	S2-165931	Nokia, Alcatel-Lucent Shanghai Bell	Approved	FS_PS_DATA_OFF
S2-117	23.702		Update and evaluation for solution #3.2	S2-165948	Intel, Huawei	Approved	FS_PS_DATA_OFF
S2-117	23.702		New extendable solutions with no UE modem and no VPLMN impact for early deployment	S2-166161	Nokia, Alcatel-Lucent Shanghai Bell	Approved	FS_PS_DATA_OFF
S2-117	23.702		New KI#3 solution using PCO for carrying PS Data Off UE status avoiding VPLMN impacts for early deployments	S2-166162	Nokia, Alcatel-Lucent Shanghai Bell	Approved	FS_PS_DATA_OFF
S2-117	23.702		Data Off evaluation and way forward	S2-166164	Nokia, Alcatel-Lucent Shanghai Bell	Approved	FS_PS_DATA_OFF
S2-117	23.702		Update to Solution 2.3	S2-165517	Ericsson	Approved	FS_PS_DATA_OFF
S2-117	23.702		Update on solution 3.3	S2-165582	Huawei, HiSilicon	Approved	FS_PS_DATA_OFF
S2-117	23.702		Key issue 4 solution 4.2 - correction of implementation errors	S2-165577	BlackBerry UK Ltd	Approved	FS_PS_DATA_OFF
S2-117	23.702		Update to Solution 3.4	S2-165962	Ericsson	Approved	FS_PS_DATA_OFF
S2-117	23.702		Key issue #4 update	S2-165917	Intel, Huawei	Approved	FS_PS_DATA_OFF
S2-117	23.702		Solution for Key issue 2 - Making UE aware of 3GPP PS Data Off exempt services using USSD/USSI	S2-165965	BlackBerry UK Ltd	Approved	FS_PS_DATA_OFF
S2-117	23.730		Concluding Key Issue 4	S2-165975	Convida Wireless	Approved	CIoT_Ext
S2-117	23.730		Solution 15 as Conclusion on key Issue#6	S2-166016	Vodafone	Approved	CIoT_Ext
S2-117	23.730		Clarifications on UE/MME behaviour for CN Overload Control for CP Optimization	S2-166201	Qualcomm Incorporated	Approved	FS_CIoT_Ext
S2-117	23.730		Conclusion solution 9 - Overload Start	S2-166199	Ericsson	Approved	FS_CIoT_Ext
S2-117	23.730		Addition of Impacts and Evaluations for Location Services Solutions	S2-166200	Qualcomm Incorporated	Approved	FS_CIoT_Ext
S2-117	23.730		Input to evaluation and conclusion on sol 15 for KI 6	S2-166015	Ericsson	Approved	FS_NextGen
S2-117	23.730		CIoT_Correction to KI7 solution 9	S2-166181	NEC	Approved	FS_CIoT_Ext
S2-117	23.730		Update to Solution 14 for Key Issue 6 (Inter-UE QoS) - Option 1	S2-166014	Huawei, HiSilicon	Approved	CIoT_Ext
S2-117	23.730		Handling of UE E-UTRAN capabilities when UE is camping on NB-IoT - Key issue #3	S2-166010	Qualcomm Incorporated	Approved	CIoT_Ext

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